June 23, 1962
Vol. 162—No. 25

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

A new Bell System exhibit at the Museum of Science and Industry in Chicago illustrates the importance of the telephone network. On hand for the opening were John D. deButts, left, president of Illinois Bell Telephone Co., Daniel M. MacMaster, director of the museum, and Rear Admiral Ira Nunn, commandant of the Ninth Naval District. See story on page 46.

Circulation This Issue
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13,796 Is Paid

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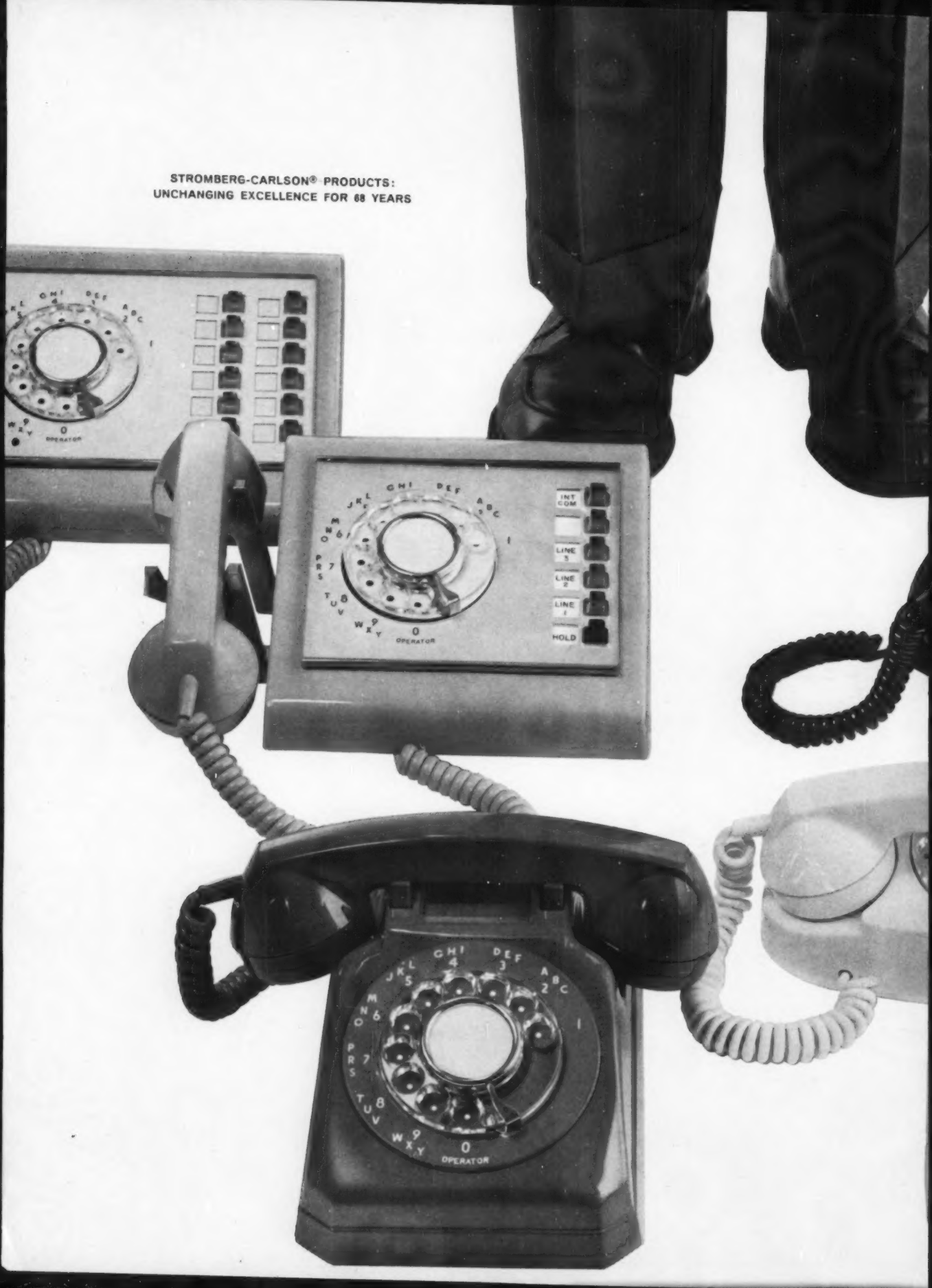
STROMBERG-CARLSON® PRODUCTS:
UNCHANGING EXCELLENCE FOR 68 YEARS



suppose you never had to service a telephone

That would be Utopia! Wishful thinking, perhaps, but it points up a simple fact. Less servicing means less expense; less expense means more net profit. That's the principle upon which STROMBERG-CARLSON® telephones are built . . . rugged and reliable so that service calls are kept to a bare minimum.

In addition, there are many other reasons for buying the Stromberg-Carlson line:

- High-efficiency performance builds satisfaction, creates fine relations for your company.
- Completeness of the line enables you to meet every need and gives the advantages of single-source buying.
- Up-to-the-minute, continuing development; most modern manufacturing techniques.
- Quick, dependable branch-office delivery of one or many telephones.

Standardize on the Stromberg-Carlson line to insure uniform quality. In Atlanta, call: 875-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.

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help you sell more extensions

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Popular where space is at a premium. Ideal for workshop, hall, or family room. Side-mounted handset can't be brushed off the hook. Angled dial is easy to use whether standing or sitting.

Available in black and 7 colors: sand beige, jade green, classic ivory, turquoise, sunlight yellow, camellia pink, and gardenia white.

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Proved superior in every way—performance, appearance, dependability. Features "walking handset" that "walks" into the cradle when replaced—thus avoiding off-hook problems.

Available in black and 7 colors: sand beige, jade green, classic ivory, turquoise, camellia pink, gardenia white, forget-me-not blue.

3 STARLITE® TELEPHONE

Beautiful compact phone for any room. Offers original rectangular design and electroluminescent dial light that lasts years longer than incandescent lamps. Exclusive rubberized cork pad covers base, resists slipping.

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Mounts on any vertical surface. Wall, column, side of desk, workbench. Dial tilts up to 45°, rotates 360°. Hookswitch swings from side to side—180° arc. Both can be locked in position most convenient to subscribers.

Available in black and 7 colors: sand beige, jade green, classic ivory, turquoise, sunlight yellow, camellia pink, gardenia white.

Across the country, extension telephone sales are booming! How about your area? Four popular AE phones help you sell by giving your subscribers a choice of extensions.

There's an AE phone for every room... every purpose. Starlite® telephone for the bedroom. Type 90 and Space-Maker® telephones for the kitchen, workshop, or family room. Type 80 desk phone for just about anywhere.

Get your share of the extension telephone market by promoting these four popular phones from AE. For sales aids that help you increase extension revenue, write to Automatic Electric Sales Corporation, Northlake, Illinois.

AUTOMATIC ELECTRIC

Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

FLASHES AND PLUGS

PHONO-FINISH. In Miami, Fla., business was proceeding briskly at a loan company when a gunman began a holdup. He first tied up two assistant managers, then the cashier, and the telephones began ringing.

Politely, the bandit spoke into the telephone each time a call came in, saying, "Please call back in 20 minutes."

Having disposed of the telephones temporarily, the holdup man discovered that customers were arriving. One by one, he managed to tie up four persons, and continue answering telephones as new calls came in.

The bandit's undoing, however, came when a couple walked into the loan office and were tipped off by an assistant manager. They called a patrolman who happened to be writing a parking ticket nearby, and he hurried in.

The officer had to drop to the floor to avoid the bandit's bullets, but he fired from that position, and grazed the robber's head. The drama ended without the bandit ever getting to the cash drawer. He wound up in the hospital.

•

JOLLY RIGHT, OLD BEAN. Cholmondeley: "I think our English way at the telephone is better than saying 'Hello' as you do in the U.S."

Yankee: "What do you say in England?"

Cholmondeley: "We say, 'Are you there?' Then, of course, if you are not there, there is no use in going on with the conversation."

•

PATRON OF THE ARTS. A Milwaukee, Wis. couple, the Burton Meldmans, recently telephoned a neighbor, Fred Mayer, to extend birthday greetings to him.

They sang lustily, only to discover after their off-key rendition, that they had sung into the ears of a stranger, not Fred, at all.

Since they had dialed a wrong number, Mr. Meldman apologized to the stranger who had been the victim of their jovial greetings.

"Don't let it bother you," replied the strange, but willing listener, "You folks sure can use the practice."

•

GOAT 'GOT HIS GOAT'. The UPI reported in a story datelined Newport, Isle of Wight, a telephone call from a man who wanted the police. "Can you help me?" pleaded the caller. I've been trapped by a goat, and can't get to work."

Doubtless, the police felt they were butting into something themselves, but on arrival at the telephone booth, sure enough, they found an energetic goat butting its head against the booth door.

Speedily, they captured the persistent goat, and rescued the man trapped inside the booth.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

SINCE 1901

June 23, 1962

CONTENTS

IN THE NATION'S CAPITAL 17
By Lawrence J. Hogan

REA APPROVES TWO LOANS 18

ABC OF THE TELEPHONE, Part 104 20
By Frank E. Lee

TELEPHONE CAREFULLY 24
By Gilbert R. Brackett

REGULATORY ASPECTS OF SATELLITE COMMUNICATIONS SYSTEMS 28
By Max D. Paglin

ANNUAL REVIEW: NEW DEVELOPMENTS IN TELEPHONY, Part 3 34
By Ray Blain

THE WOMAN'S PLACE 38
By Helen Hardin

COURTS AND COMMISSIONS 40

THE PLANT MAN'S NOTEBOOK 41
By Ray Blain

PLANT MAN'S QUIZ 42
By Ray Blain

TRAFFIC PAGE 44
By Winnie Burnett

NEWS ON NEW PRODUCTS 56

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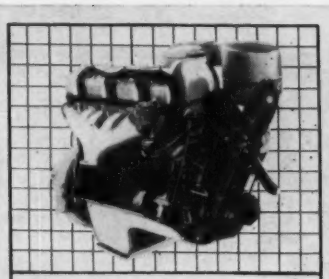

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Max. torque @ RPM (foot pounds) . . . . . 210 @ 1750
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Overhead camshaft simplified valve system
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exhaust valves . . . . 1.618 in.
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Spheroidal combustion chambers
Carbo-nitriding hardened crankshaft.

Today, after years of research, development and testing, Willys Motors proudly presents the 'Jeep' Tornado-OHC—America's first overhead camshaft engine designed specially for commercial vehicles.

What is an OHC engine? In a conventional engine, the valves are on top—the camshaft, which operates them, down below. The Tornado-OHC engine has overhead valves *and* an overhead camshaft—which is what the initials OHC stand for. The simplicity of this engine—it has 36 fewer moving parts than a conventional pushrod 6-cylinder engine—makes it much more efficient. It produces 33% more power with up to 25% better gas economy, needs less maintenance and lasts much longer.

Write today for details! 'Jeep' Pick-ups, 4-wheel drive Utility Wagons, 2-wheel drive Station Wagons and Panel Deliveries are all now available with extra Tornado-OHC performance as well as their traditional 'Jeep' ruggedness. So choose the vehicles for your fleet from the 'Jeep' line, America's only complete line of 4-wheel drive vehicles, the only ones with the powerful, economical Tornado-OHC engine. Write today for full information about the world's toughest vehicles to: Robert Morgner, Fleet Sales Manager, Willys Motors, Inc., Toledo 1, Ohio.

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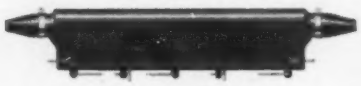
HIGH STANDARD TELEPHONE PROTECTION AND DISTRIBUTION EQUIPMENT

SPLICE COATS

81-250
81-565



81-420 81-435

81-99

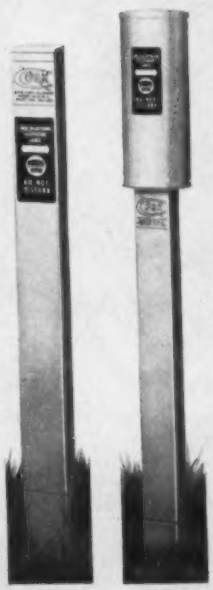
Splice Coats provide weather-tight covers for cable splices, protection equipment and loading coils. They are available in various sizes with equipment for all types of plastic sheathed cable and distribution wire.

TERMINAL BLOCKS

81-101 81-215 81-185

This type terminal block has standard mounting studs for all Splice Coats. They are supplied unprotected or with Minigap or Washer-gap protection.

BD PEDESTALS

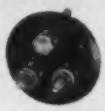


521-119 521-120

BD Pedestals are used as test points and for terminating and distributing buried cable and wire.

ONE PAIR TERMINAL BLOCKS

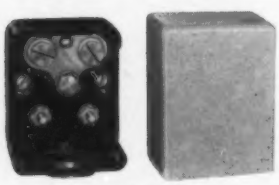
PROTECTED
81-381



UNPROTECTED
81-382

These terminal blocks can be supplied unprotected or with Washer-gap protection. They are used for termination and protection in Splice Coats and BD Pedestal housings.

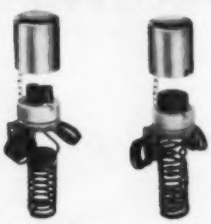
FUSELESS STATION PROTECTOR



501-300

A new Cook station protector listed by the Underwriters Laboratories. This unit has a current carrying capacity that meets the National Electrical Code.

POWER CROSS PROTECTORS



501-40 501-145

Single circuit protectors are available with either circular or pie shaped electrodes. A 5 circuit protector is also available.

LOADING COIL CASES

EXPANDABLE
614-SLPX

STRAND MOUNTED 614-LLS

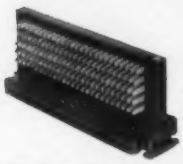
DIRECT BURIAL 614-SLB

POLE MOUNTED 614-SLP

UNDERGROUND
614-SLU

Cook coil cases are for strand or pole mounting and for underground or direct burial applications. They are furnished in various capacities and can be supplied in steel or lead with plastic or lead stub.

LINE TERMINAL BLOCKS TYPE 130

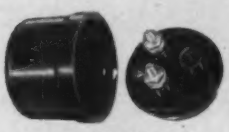


VIEW SHOWING CLIP PILE UP

VIEW OF ADJUSTABLE MOUNTING BRACKET

This is a universal terminal block with Bakelite clip-strips and base. It has an adjustable mounting bracket for either vertical or horizontal mounting.

ONE PAIR TESTERM



81-391

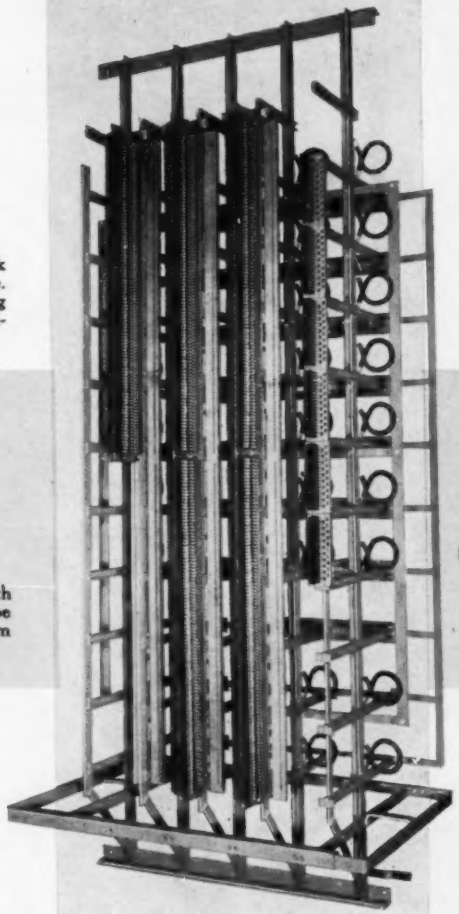
This is an unprotected terminal with a pliable plastic cover. It can be used for either pole or cross arm mounting of open wire.

O-9u SUBSTATION PROTECTOR

473-24

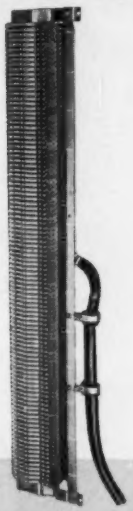
A single circuit protector listed by both the UL and REA for either indoor or outdoor installation.

DISTRIBUTING FRAMES



A type "L" combined distributing frame with vertically mounted terminal blocks, central office protectors, copper ground bar and a guard rail with standard end guards.

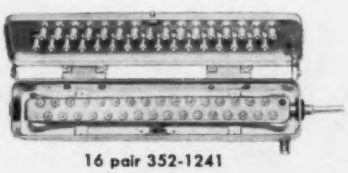
3800 CENTRAL OFFICE PROTECTOR WITH STUB



The 3800 protector is now available with factory connected, color coded, tip cable stub for more economical and dependable installations.

Circuit Marker And Cover For 3800 Central Office Protector

STRANTERM CABLE TERMINAL



16 pair 352-1241

This gas tight strand terminal has selective snap-in Minigap protection and is available from 6 pair through 26 pair.

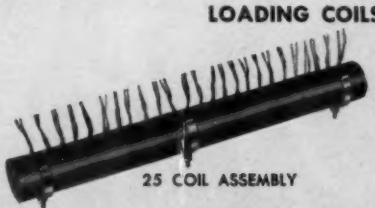
LOADING COILS

Loading coils are available in single units, 1 to 25 unit assemblies, or in clusters for Cook coil cases.

Cook loading coils are encapsulated to maintain constant electrical properties and for mechanical strength.

5 COIL CLUSTER

10 COIL CLUSTER



25 COIL ASSEMBLY

SINGLE COIL

3 PAIR ASSEMBLY

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says Mr. F. E. Fair, General Manager of Eastern Iowa Light and Power Cooperative, Wilton Junction, Iowa

"Our trucks and crews must be prepared to handle emergencies while the weather is throwing its worst at us. Even under ideal conditions at least one third of our maintenance and patrol mileage is off-road through woods, fields, ditches, mud and sand. And our line construction projects are almost exclusively off-road. Ford's durability under these rugged conditions coupled with one of the best dealer organizations in our vicinity is why we standardized on Fords 9 years ago.

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"Since we can't pick the weather or the roads, we must pick the most reliable truck to get our jobs done . . . and in our book that's a Ford!"

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means more
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profits...

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K-1A1 is a system business men instantly recognize and accept . . . with all the features they want and need.

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Ask your ITT Kellogg representative to give you all the details.

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We made it in 1882

We made it to work. And we made it to last. And it did. True, you shouted into the mouthpiece to make yourself heard, and you shushed the family so you in turn could hear. But, it was the best telephone in the world.

That's why—80 years ago now—The American Bell Telephone Company acquired a major interest in the company that made it. They wanted to assure themselves of a source of telephones – and wire and cable and switchboards – that would not only work but work together. Common standards – and a common purpose shared by the people who made telephone equipment and those who operated it – would prove essential to the orderly development of the telephone.

That's why the Western Electric Company became a member of the Bell System team back in 1882. And that's why it continues as a member of the Bell System team today.

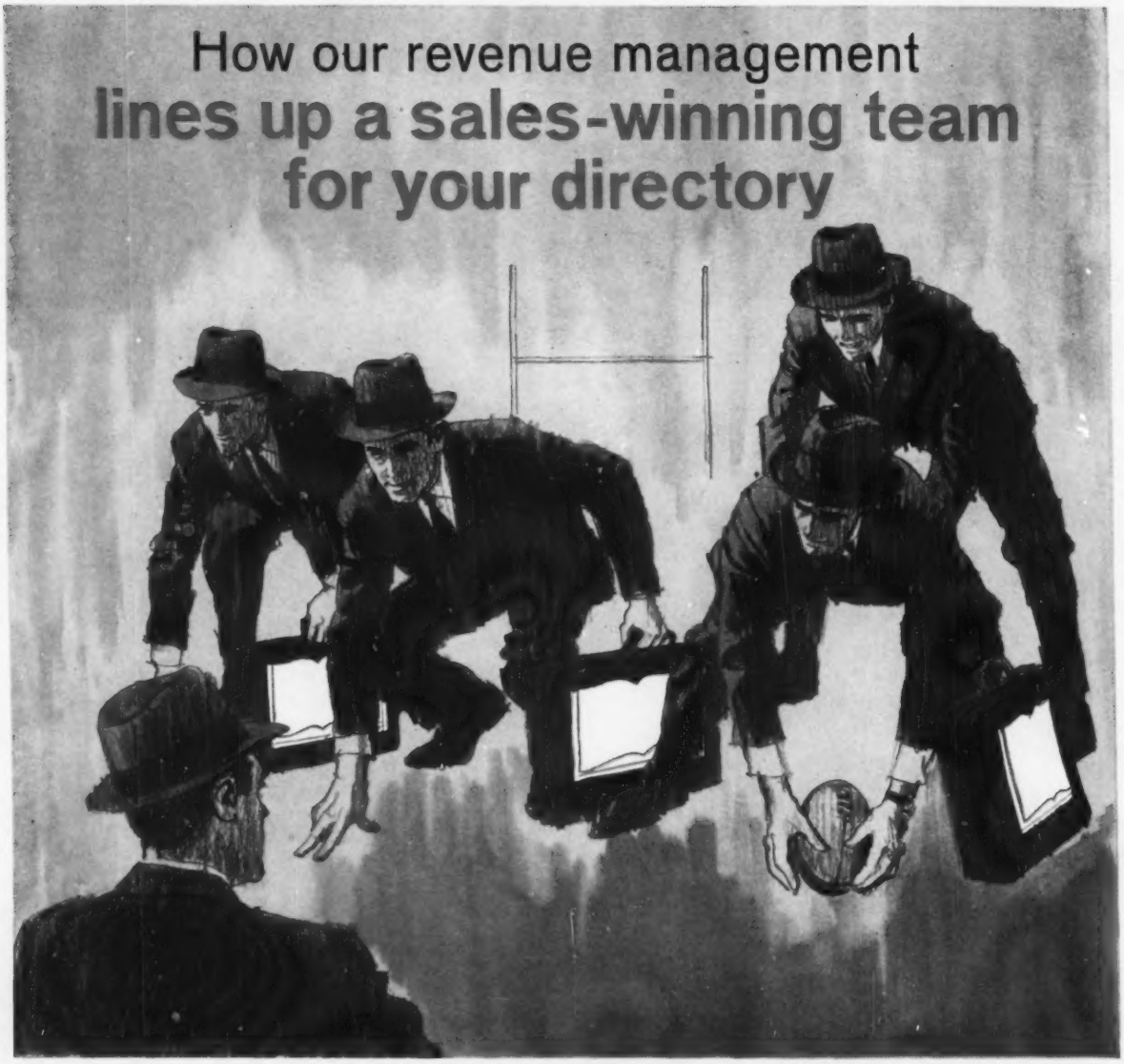
There were 60,000 Bell telephones in the U.S. in 1882. There are 65 million now, each linked to all the others in this nationwide network comprised of millions upon millions of separate parts designed and made to work together without fail.

And they do – because the people who are responsible for the design, manufacture and operation of Bell telephone equipment share a common purpose. Down through the years, Bell System teamwork, joining people with a shared responsibility for ever-better telephone service, has brought Americans the best – and the most – communications anywhere. We work best because we work together.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

How our revenue management lines up a sales-winning team for your directory



It's an all-pro team we send in to tackle your directory sales problems! Every man's been selected for standout abilities – thoroughly drilled in strategies for getting more out of every revenue opportunity in your territory.

A highly experienced Division Manager plans each canvass. His team is expert at uncovering revenue possibilities often overlooked or neglected. The crew goes all out to improve the community-wide representation in your Yellow Pages and make them more valuable to *all* your subscribers.

So it's easy to see how these real professionals can build goodwill for you while they're boosting your Yellow Pages revenue to a never-before high. To check out all the details with the Division Manager who would work with you on this, call or write the nearest office listed below.

LAWRENCE BUCKLAND captains our Madison, Wis., revenue squad. Graduate of Ripon College. College activities included orchestra, glee club, French club, and wrestling. Active in Red Cross and Community Chest. Board member, National Marketing & Sales Executive Club. Past V.P. Omega Sigma Chi. Joined Gen Tel Directory in '41. Sales Supervisor in '48. Asst. Eastern Sales Mgr., '51. Division Mgr. in Madison since '54.

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

Communications satellite bill opposed by senators who believe in government ownership . . . . claim necessary elements for satellite system have been "financed by taxpayers of the United States." Telephone excise tax to continue, but it is attacked in Senate.

THE COMMUNICATIONS Satellite Act of 1962, calling for "the widest possible participation by private enterprise," has been given some rough sledding by dissenters who believe in complete government ownership of the system.

Senators Ralph W. Yarborough (D., Tex.) and E. L. Bartlett (D., Alaska) of the Senate Interstate and Foreign Commerce Committee have prepared a dissenting report wherein they opine that the bill "amounts to a delegation of American foreign policy to a private corporate monopoly." They fear the State Department will not be able to "cooperate" with Soviet Russia and other nations of the world unless the government has complete control over the U. S. development of the system for the benefit of all mankind.

No businessmen, however, want to usurp the power or responsibilities of the State Department. They want first to develop something to negotiate about. They would have little more to say about international agreements or satellites than do commercial airlines which fly to Iron Curtain countries or communications firms which have communications ties with foreign nations, both friendly and unfriendly.

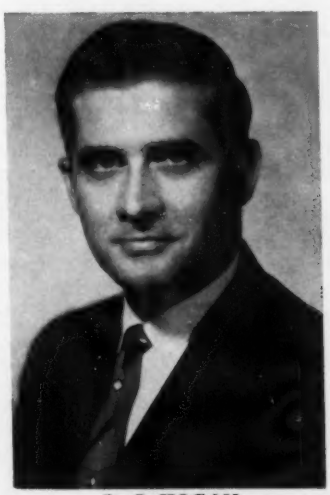
Senators Yarborough and Bartlett specifically state also, among their objections, "All the elements necessary for the very existence of an operational satellite communication system have been financed by all the taxpayers of the United States. It is our belief that all these same taxpayers should receive the benefits of the system when it becomes operational." (See editorial, "Private Enterprise vs Government Ownership—Satellite Bill Faces Test in Senate," in the June 16 issue of TELEPHONY.)

This latter belief is the crux of the matter: ". . . *when* it becomes operational."

We might point out that it is ironic that at the very time they were saying this, the Army was forced to abandon its 170 million dollar Advent project and turn it over to the Air Force. On the other hand, Telstar, the Bell System's satellite project, is proceeding right on schedule and is to be launched about July 15.

Taxpayers should indeed realize the good which evolves from technological advances, but when government handling of the projects costs them millions upon millions, many would prefer to have the job done, and done correctly and expeditiously, by private enterprise. In this manner they not only receive the benefits but save money in the long run.

The Department of Defense, incidentally, has released a news item which is an exercise in government gobbledygook but which, if you can wade through the polysyllabic wording, gives a picture of the vacillation of the Advent program.



L. J. HOGAN

Pointing out that a "technical redirection and a reassignment of responsibilities" in the federal satellite program has been announced, the release goes on to say in words as big and multisided as the Pentagon: "The present Advent program is being reoriented to bring it into consonance with available boosters. In addition, the development of an additional system of medium altitude communications satellites is also being planned.

"Under the new arrangement, the Department of the Air Force will assume responsibility for the development, production and launch of all space devices necessary to establish these systems—a change consistent with the general policy for the development of space systems, announced in March 1961.

"The Department of the Army will be responsible for the development, implementation and operation of the ground environment—that is, the ground communications stations and associated items—of these systems. Portions of the ground environment that are directly associated with the launch and control of the satellites themselves may be assigned to the Air Force.

"The Defense Communications Agency has been assigned responsibility to assure the integration of the ground and space components in accordance with its broad responsibilities for telecommunications within the department.

"Over-all systems management of

Advent has been the responsibility of the Department of the Army since September 1960, when it was transferred from the Advanced Research Projects Agency. Under Army management, a Project Advent management agency was established by the Army Signal Corps. The function of this agency was to provide over-all management and technical direction through development, installation and total system evaluation phases.

"The Air Force has, since 1960, had responsibility for launching operations for Advent, with the U. S. Army Signal Research and Development Laboratory, Fort Monmouth, N. J., providing technical support.

"The reoriented program will include the research and development necessary to demonstrate the feasibility of a microwave communications satellite operating in a 24-hour equatorial synchronous orbit. The satellite will operate at the height of 22,300 statute miles. It will be operated with two ground stations, one on each coast—one near Camp Roberts, Cal.; the other near Fort Dix, N. J. A shipborne station, to be provided by the U. S. Navy, is also planned."

Brazilian Expropriation Decree

The first test of the nebulous decree issued by the Brazilian government concerning expropriation of foreign properties may result from negotiations presently going on between Brazil and American & Foreign Power Co. (AFP), an American-owned firm. Brazilian officials are working with AFP's executives with a view to taking over the Brazilian facilities of the company.

Brazil's nationalization decree sets up the machinery for the government to acquire major foreign-owned utilities. It provides for a three-member commission to negotiate the acquisitions. The commission is to be responsible to the Brazilian Council of Ministers.

Initial payment for a seized property would be up to 10 per cent of the value agreed on in negotiations. The balance would be paid out of the earnings of the seized property. The former owner of the property would be required to reinvest in Brazil at least 75 per cent of the payment received under the compensation plan. If the two sides failed to reach agreement, provision is made to submit the matter to arbitration.

American & Foreign Power's negotiations cover 10 utilities, mainly electric companies. American & Foreign puts the total value of the plants at 302 million dollars, of which the company has a 68 per cent interest, with the remaining 32 per cent owned by Brazilian nationals.

A close observer of the new Brazilian decree said one of the uncertainties of the law is whether the initial 10 per cent down payment for a seized property will be paid in U. S. funds. He said another question is: At what rate would the cruzeiros be convertible into dollars? Brazil has varying rates for different purposes. In addition, the observer asked: What sort of investments in Brazil would the affected companies have to make with the 75 per cent of the compensation they receive? The decree stipulates the reinvestment would be in areas of "priority" for Brazil's social and economic development.

ITT has said it values its telephone company seized early this year at 6 million to 8 million dollars. The state of Rio Grande do Sul is reported to have deposited the equivalent of about $400,000 as compensation to ITT. The company said talks with Brazil about the expropriated property were halted about three weeks ago. ITT added that it has tried, without success so far, to reopen the talks. The company said it has proposed settlement terms.

The brazenness of the Brazilian government, the economy of which depends to a great extent upon U. S. aid, makes even more important a complete reevaluation of our relations with that country. Sen Bourke B. Hickenlooper (R., Ia.) is aiming in the right direction, it seems to us.

The U. S. Senate has passed a 4.3 billion dollar foreign aid authorization bill, including an amendment by Senator Hickenlooper to make an expropriation clause in the bill retroactive to last Jan. 1. This would cover the Feb. 16 expropriation of the ITT telephone company. The amendment requires the suspension of aid to any country in which U. S. property has been expropriated unless steps are taken within six months to remedy the situation or to submit the dispute to arbitration.

REA Approves Two Loans

Telephone loans authorized by the Rural Electrification Administration early in June totaled $1,310,000 as follows:

Pioneer Telephone Cooperative, Kingfisher, Okla.; $930,000; June 4.

With the assistance of these loan funds, the Pioneer cooperative plans to improve service for 992 subscribers and furnish initial service to 208 subscribers. Pioneer has also acquired and plans to improve and integrate the following companies: Citizens Telephone Co., Wakita; Blue Ridge Telephone Co., Fargo; and the Nash Rural Telephone Co.

The company will be reimbursed for the acquisition of the three companies. In addition, the cooperative also has received a certificate of convenience and necessity from the Oklahoma Corporation Commission to serve the area now served by the Hawley Telephone Co. The four companies now provide magneto service to 992 subscribers.

New dial central offices will be constructed at Fargo, Harmon, Nash and Wakita. The Hawley community will be served by the Nash Exchange.

REA loans to Pioneer will help enable it to bring new and improved service to 15,744 subscribers. Twenty-three of the proposed 40 exchanges now furnish dial service to approximately 13,775 subscribers.

•

The S & T Telephone Cooperative Association, Brewster, Kan., $380,000 June 5.

With these funds, S & T plans to furnish initial service for 191 subscribers and to improve service for 137 subscribers.

The borrower proposes to acquire, improve and expand the Healy Telephone Co. which is contiguous to the Grinnell exchange of the S & T system. The Healy company now furnishes dial service to the 137 subscribers.

A new and larger dial office is planned to replace the existing Healy central office.

In addition, loan funds will be used by S & T to help enable the company to install dial mobile radiotelephone stations at Brewster and Grinnell to serve 57 mobile subscribers, and to provide for system maintenance. Facilities will also be added to furnish a higher type of service for existing subscribers.

REA loans to S & T are helping it to serve 1,681 subscribers. Seven exchanges of which six now furnish dial service to approximately 1,260 subscribers, will make up the system.

"Temporary" Telephone Excise

Your Washington editor questioned Rep. A. Sydney Herlong Jr. (D., Fla.), member of the House Ways and Means Committee, about the administration's headline-catching propaganda about reducing taxes. We asked Congressman Herlong why, if the administration desired to reduce taxes, they did not permit the 10 per cent excise tax on telephone service to expire, thereby giving a tax break to the widest possible group of taxpayers. The Florida representative said there was no possibility of eliminating the telephone tax "this year."

Eliminating the telephone tax would not reap the administration the publicity advantage it seeks and would, of course, trim about 900 million dollars from Uncle Sam's income. There is, however, more logic in eliminating the telephone tax and giving the ultimate consumer additional money to spend. This would stimulate the economy by picking up the volume of business considerably and would be a more effective boost than cutting personal income tax in the higher brackets.

As telephone people and consumers have learned, there is nothing more permanent in Washington than "temporary" tax measures.

Attacks Telephone Tax

On June 13, the *Congressional Record* printed a speech made earlier by Rep. Thomas J. Lane (D., Mass.) in which he lashed out at the extension of emergency taxes which evolved during World War II.

He specifically referred to the 10 per cent tax on telephone services as a "nuisance tax" and added that he had "spoken out against this tax many times as unfair to the companies providing the service and to their patrons."

He went on to say, "The millions of telephone subscribers in the nation would benefit by a 10 per cent reduction in their telephone bills if this tax were repealed. . . . The gradual repeal of wartime taxes should reach out to cancel a similar burdensome tax on general telephone service."

The Massachusetts congressman noted that "increased use of this communication medium will more than compensate for the loss of tax revenues."

WATS Revenue Accounting

By Report and Order, the Federal Communications Commission on June 13 finalized rule making in Docket 14310 and amended its Uniform System of Accounts for Class A and B telephone companies to provide a new, separate Account 511 for revenues from Wide Area Telephone Service (WATS), Wide Area Data Service (WADS), and similar services, and made minor related changes in other accounts.

The amendments are effective Jan. 1, 1963, but may be adopted by any company earlier. At the same time, it made changes in the telehpone Annual Report Form M to, among other things, require that revenues from interstate services be reported separately in each revenue classification for the 1962 and subsequent reports, and made related changes in the telephone monthly report Form 901 to become effective with the January 1963 reports.

The adoption of the report is without prejudice to any action the commission may take with respect to proceedings on AT&T regulations and charges for WATS (Docket 13914), Developmental Line Switched Service (Docket 14154) and TELPAK (Docket 14251).

Endorses Office of Solar Energy

Sen. Hubert H. Humphrey (D., Minn.) on June 12 made a speech on the floor of the Senate in which he endorsed the creation of an Office of Solar Energy within the Department of the Interior.

Pointing out that the power potential from the sun is unlimited, the Minnesota senator asked his colleagues ". . . to consider some of the factors of this suggestion:

"(1) Solar energy is freely available.

"(2) It is omnipresent.

"(3) Most of its radiation is of a high energy potential.

"(4) It has a low and variable density.

"(5) Utilization of it does not produce noxious waste products."

He pointed out that back in February, 1962, he addressed the Senate on the establishment of an Office of Solar Energy and noted at that time:

"With stepped-up research and development, we can utilize solar energy for a vast area of positive purposes. Power for communications, hospitals and agricultural equipment, to name a few purposes, can be placed in isolated areas of the nation and world where no power exists now."

Senator Humphrey concluded by saying, "Regrettably, no one agency or office of the government at present has an over-all responsibility or total interest in solar energy research and development. The Department of Interior with its interest and experience in the development of power and energy sources could and should take the lead in this long overdue task of coordination and administration. I urge that the secretary do this without delay."

* * *

(EDITOR'S NOTE: We cannot refrain from pointing out that the solar battery is one of the developments of the Bell Telephone Laboratories and is one that makes a communications satellite system possible. It is not unreasonable to believe that soon Senator Humphrey and the Interior Department will be claiming that the taxpayer, through the federal government, developed the solar battery.)

How You Profit

Generally speaking, those who benefit mostly from profits are the employes of business, and their families. (If you're both employe and shareholder, ask yourself which is more important—your dividends or your job?)

It follows that employes are likely to feel the worst effects of the absence of profits. A business that earns barely enough profit to survive cannot expand and create additional jobs. Nor can such a business do much to improve the jobs it does have—or to assure their continuance. And a business that fails can't keep people in jobs.

Profits have been squeezed pretty thin by high costs and taxes—to the point at which the job-creating capacity of business is not what it should be, and could be.

The economy of the United States has been a prosperous, high-wage, highly productive economy because it has been a profit-making economy. But like everything else, it has limits. As one industry spokesman said recently:

"Reducing prices or avoiding price increases has great popular appeal. But we cannot have it both ways. We cannot have inflationary wage increases, higher taxes and other rapidly increasing costs on the one hand, and enjoy reduced and unrealistic price levels on the other, without endangering national growth and jeopardizing jobs."—from General Telephone Co. of the Southwest "News."

A B C of the Telephone

by Frank E. Lee

THE IGNITION system is designed to deliver a high voltage impulse to each spark plug at a precise instant during each compression stroke. The igniting spark is created as this impulse arcs across the gap between the individual spark plug electrodes. For this reason, the importance of a good set of spark plugs cannot be over-emphasized. Good spark plugs are important from the standpoint of performance as well as economical operation. All of the precision engineering and ignition system refinement have little value if the spark plugs fail to fire efficiently.

Spark plug maintenance should include the following:

(1) Inspection of each plug as removed from the engine. The condition of the plugs will indicate how well they are suited for the service in which the fleet vehicle is engaged. Typical conditions to look for are:

(a) Heavy black carbon or black soot deposits. These deposits may be caused by rich fuel mixture, worn pistons, worn rings, or defective ignition. This may also be an indication that the plug is too cold for the specific application.

(b) Inner porcelain chipped, cracked, or covered with an oxide coating. These are signs the plugs are operating too hot. Replacement should be made with a cooler plug.

(c) Gap too wide. After many miles of operation this is a normal condition and in no way should be considered as a plug failure. Reset the gap and check the setting with a round feeler gauge. The round gauge fits the contours of the gap and provides an accurate measurement. A flat gauge does not fit into the worn center portion of the gap contour. As a result, a setting made by using a flat gauge may be inaccurate.

Part 104. THE TELEPHONE FLEET. Section 7. Economy maintenance Program—Spark is Important for Engine Performance (Cont.)

Section 6. Economy Maintenance Program—Spark is Important for Engine Performance (TELEPHONY, June 16).

Section 5. Economy Maintenance Program-Good Compression Vital to Engine Performance. (TELEPHONY, Feb. 24).

Section 4. Economy Maintenance Program—Checking Fuel-air Mixture (TELEPHONY, Nov. 18, 1961).

Section 3. Diesel Economy May Be Added to the Telephone Fleet (TELEPHONY, Aug. 26, 1961).

Section 2. Good Management Pays Off in Better Fleet Service (TELEPHONY, Apr. 29, 1961).

Section 1. A Vital Link in a Good Communications System (TELEPHONY, Apr. 22, 1961).

(2) Identical plugs in identical engines may produce varying results if the fleet vehicles are engaged in different types of service. These differences in operating conditions cause the plugs to run hot or cold in a relationship somewhat parallel to the operating temperature of the engine.

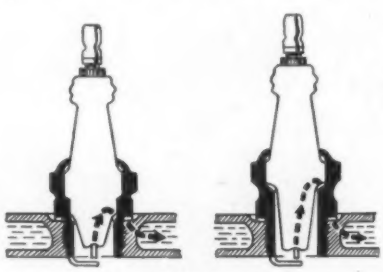


Fig. 5.

The term "heat range" refers specifically to the ability of the plug to conduct heat away from the inner tip of the porcelain, *Fig. 5*. A "cold" plug is shown at the left; a "hot" plug is shown at the right. Note the longer heat travel from the tip of the insulator to the coolant.

The heat travels through the porcelain, to the outer shell of the plug, and then into the engine block or head. Thus, the longer the porcelain of the plug, the longer is the time required to carry the heat away, and the hotter the plug will be in operation. Thus, the heat range of plugs runs from hot—long porcelain—through various degrees in the heat range to cool—short porcelain.

For door-to-door service at slow speeds, or for short trips in slow or heavy traffic, the operating temperatures generally are lower and a hotter plug should be installed. For long trips at uniform high speeds, the engine temperature will be higher and a colder plug would perform more efficiently.

(3) Old plugs in reuseable condition should be cleaned thoroughly in a compressed air cleaner. Electrodes should be reset and gaps should be checked with a round feeler gauge. New gaskets should be used when reinstalling the plugs in the engine.

Inspection of Wiring

The general condition of the high tension wiring will be indicated by the over-all ignition test discussed in the previous article in this series (TELEPHONY, June 16). Specific trouble in

the high tension wiring can be located by inspecting and testing each individual wire.

A variable spark gap is placed in series with each individual wire to locate the wire or wires that may be worn and in trouble. The usual procedure is to disconnect a spark plug wire and connect one spark gap high tension lead to this wire. The other spark gap high tension lead is connected to the spark plug terminal.

The spark gap test will prove conclusively whether or not an ignition lead is in good operating condition. Individual spark plug wires can be replaced; however, the usual procedure is to replace the complete set. As a rule, the complete set of wires will deteriorate about the same amount in the same length of time. However, a single wire may be damaged or broken for some reason and replacement of this single wire in that case would be the most economical maintenance procedure.

Primary Circuit Wiring

Hard starting places a severe load on the electrical system of a fleet vehicle. Very often the cause of the hard starting can be traced to a fault in the primary circuit wiring. One cause of hard starting is a poor ground connection on the battery. The cause of the trouble may be dirty or corroded connections at the battery or on the frame. The ground strap could also be defective.

Use a voltmeter to check for a defective ground connection. Connect one voltmeter lead to the battery post on which the starter lead is connected. Operate the starter and use the other voltmeter lead to test at the following locations:

(1) The ground terminal of the battery
(2) The center of the ground strap
(3) The ground connection to the frame
(4) A clean surface of the frame.

The voltmeter should not read more than 0.2 volts for any of these tests. If the voltmeter reads higher than 0.2 volts, clean and tighten all the connections or replace the ground strap.

Use the voltmeter to check the voltage drop of the battery cable towards the starter, *Fig. 6*. Ignition must be "on" so current is flowing. The voltmeter can also be used to check the voltage drop through the ignition switch, ammeter, and associated wiring to the primary winding of the ignition coil. The primary current draw of the coil can be measured by connecting an ammeter in series with this circuit.

Replace defective starter leads or ground straps with high quality parts. Replace any other defective primary circuit wiring uncovered by the voltage drop tests. The battery terminals or connecting lugs should be clean and bright when reconnecting old wires or installing new wiring. Make sure the connections are snug and tight.

Generator and Generator Regulator

Ignition trouble and hard starting can develop over a period of time. A prime cause of this annoying trouble could be a gradually deteriorating battery. Actually, however, the basic trouble may be in the generator and generator regulator and not in the battery itself. If the battery voltage and charge is not correctly regulated, a new battery can be damaged in a short time. As a result, an inspection of the generator and generator regulator should be made at periodic intervals to be sure the battery is being charged properly.

An inspection of the generator should cover the following items:

(1) Check the generator commutator. Look for a rough, worn, or dirty appearance, indicating prolonged excessive arcing between the brushes and the commutator segments.

(2) Check the condition of the mica between the commutator segments. Determine if the mica insulation is higher than the adjacent metal of the commutator.

(3) Examine the brushes. Look for the signs of excessive wear.

(4) Check for thrown solder on the inner surfaces of the generator or inspection cover band. Solder splashes usually are a sign of loose connections between the armature windings and the commutator segments.

Generator Maintenance

The following steps should be taken to service the generator:

(1) Clean the commutator by:
   a. Removing accumulated grease with a cloth soaked in carbon tetrachloride or an equivalent cleaner.
   b. Polishing the commutator with a strip of No. 3/O sandpaper held over the square end of a small wooden block. Never use emery cloth for this purpose. This would remove too much metal from the surface of the commutator.

(2) Replace badly worn brushes. Seat new brushes with crocus cloth, as shown in *Fig. 7*.

(3) Use an air gun to blow out all dust and loose particles from the interior of the generator.

(4) Make sure the cover band is properly replaced.

(5) Check the generator wiring to be sure all the connections are clean and tight.

A generator that requires extensive reconditioning beyond the service items mentioned above should be replaced with a new or rebuilt unit. An important point to remember in replacing a generator is that the replacement should be the exact duplicate of the unit being replaced.

Special precautions are in order when using a rebuilt unit to be sure that, in the rebuilding process, the basic output characteristics of the generator agree with the name-plate

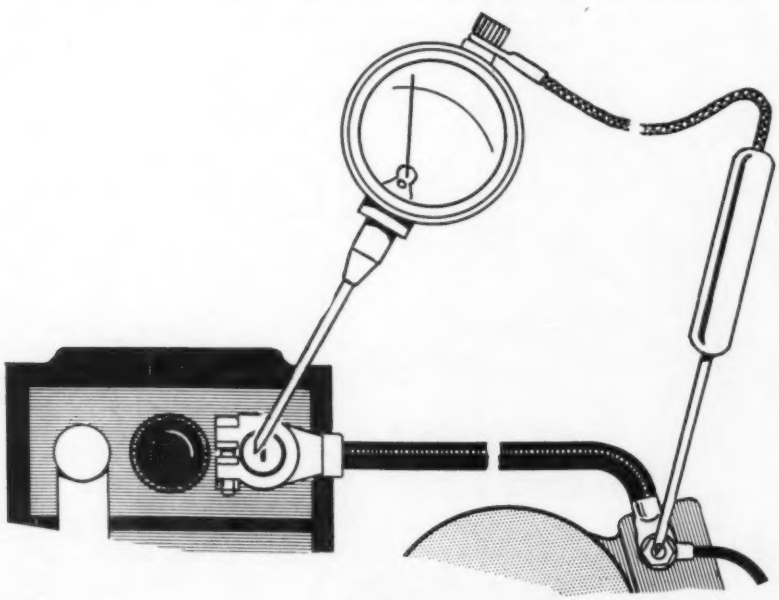


Fig. 6.

Fig. 7.

specifications. Specifying a replacement that matches the generator being replaced should be a hard and fast rule of the fleet shop. Too much trouble has been experienced in fleets of all sizes by installing replacement generators that did not match the output characteristics of the original equipment generator.

Regulator Maintenance

The generator regulator, often called the voltage regulator, should be tested with an accurate voltmeter and ammeter. *Fig. 8*, left, shows a typical charging circuit with a conventional three-unit type regulator. A circuit using a double contact regulator is shown at the right. The regulator is built to precise specifications and tests should be made to be sure that:

(1) The cut-out relay is functioning at the correct voltage.

(2) The current regulator is operating to keep the charging rate within the limits specified by the manufacturer.

(3) The voltage regulator is keeping the input current at the correct voltage.

The contact points in the regulator unit are subjected to continual operation. To be sure they are functioning properly, the points should be inspected as follows:

(1) Clean dirty or oxidized points with a clean file.

(2) Separate fused points and dress them with a fine file to prevent them from re-locking together.

(3) Adjust the spring tension of the armatures in the control unit. These adjustments are directly related to the results developed in the electrical test of the regulator unit.

Many of the precautions mentioned for the replacement of the generator also apply to the replacement of the regulator. Each one is designed to operate with a specific generator and a definite polarity electrical system. The only time a regulator should be interchanged is when an existing model is superseded by a new model.

Unless a regulator is matched to a generator, the regulator is bound to fail. A change of only four or five ohms in the value of the resistor in the regulator will have an important bearing on the life of the regulator. The reason is that an incorrect resistor will cause the vibrating contacts to pit and stick. As a result, the regulator will soon be out of service.

An American Automobile Association service bulletin, published in 1953, included a step-by-step test procedure that goes a long way towards eliminating chances of error in testing the generator regulator. This procedure, as presented in the AAA bulletin, is as follows:

Check the generator regulator, but not until the following has been done in this order:

(1) Check voltage at battery.

(2) Check voltage drop in ground strap.

(3) Check voltage drop in starter cable.

(4) Check voltage drop in charging circuit.

(5) Check voltage drop in generator ground to battery ground.

(6) Check voltage drop in generator regulator ground.

(7) Test cut-out relay.

(8) Test vibrating voltage regulator.

(9) Test current regulator.

Starter Service

The condition of the starter has an important effect on the strength of the spark when the engine is being started. This fact is sometimes overlooked because the starter is not part of the ignition system. The starter, however, places a heavy load on the battery. This, under the best of conditions, reduces the current available to energize the ignition coil and create a spark as the distributor points open. If the current draw of the starter is excessive, the primary ignition current could be weakened to a point where a spark will not be created in the ignition system.

In most instances, starter trouble is caused by poor electrical connections or trouble in the starter switch. A quick run down with a voltmeter offers the best way of checking the starter circuit. Following are the simple tests involved in checking the starter:

(1) Check the voltage drop of the ground strap and the lead between the battery and the starter switch terminal.

(2) Check the voltage drop between the two starter switch terminals while the switch is operated to energize the starter. A voltage drop of over 0.2 volts indicates a defective starter switch. This test should be made by using a high voltmeter scale to avoid damaging the voltmeter in case the voltage drop is unusually high.

(3) Remove the brush cover plate and inspect the starter brushes and commutator. Replace worn brushes and seat the new brushes, as shown in *Fig. 7*.

(4) If necessary, clean the commutator with No. 3/O sandpaper held over the end of a wooden block. This is similar to the cleaning procedure recommended for the generator commutator.

The tests of the ignition system, along with the tests previously described for the fuel system and engine compression, have described how engine performance usually falls off gradually. Costs rise as fleet perform-

(Continued on page 49)

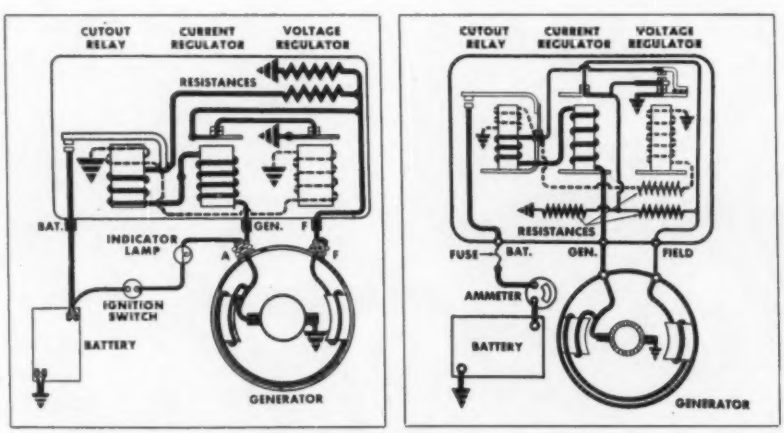


Fig. 8.

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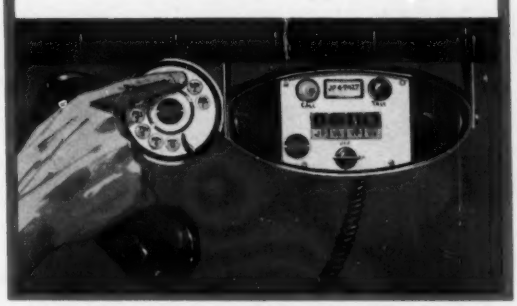

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Telephone Carefully

The Job You Save May Be Your Own

By GILBERT R. BRACKETT

PERHAPS READERS of TELEPHONY will wonder why an article of this kind should be published in a magazine devoted to and written for experts who know all about telephone service problems and who would surely practice what they preach. Too, telephone people are given "defensive driving" courses and are continuously warned of the dangers of careless driving habits practiced on the busy highways of today. They should need no prompting. Hmmmmmmm!

Perhaps so, but the telephone industry is made up of human beings who have frailities the same as other people the world over. Perhaps you have witnessed telephone people use a telephone in a manner that would bring criticism from themselves had they seen a layman following the same irregular procedure.

* * *

SLOW ANSWERS. Sure most telephone people are good automobile drivers. I wouldn't argue that point. So are 90 percent of all drivers. It's the 10 percent we have to . . . awh pshaw! Read the article. You may recognize a friend, even a telephone friend.

The telephone, like the automobile, sometimes seems to bring out the most obnoxious traits in a person's character. A man may go off his rocker when the telephone dial tone or operator is slow in attending his call, just as he considers the driver ahead a sluggard when he maintains a sane speed. The "so-and-so" is purposely delaying his meeting the hour set for that all-important engagement, he thinks. Our friend's confused, frustrated thoughts will not carry him quite far enough to realize that he is not the only one on the highway, or that when he makes a telephone call others might be using the circuits too.

* * *

THE SECRETARY. Although a person may be telephoning to request a favor or sell a bill of goods, his time is much too valuable a commodity to be wasted waiting for the called person to answer the telephone so he delegates such "beneath-his-dignity" practices to a secretary. All of which is just about as discourteous and incommodious as drawing his car up before a stop light in the near lane to wait for the green light to signal that traffic ahead is clear. Although the green arrow had indicated permission to turn right, our friend had blocked the car behind him from turning the corner until he had sated his ego and shot out ahead in the race to reach the signal on the next corner, where again he has to wait.

* * *

TIME WASTER. "Hello!" on a telephone means nothing but more work for the calling person, also for the one who answers the telephone. It goes something like this:

"Hello!"
"Hello!"
"Is this Dick Conlon?"
"No!"
"Is he in?"
"There's no Dick Conlon here?"
"What number is this?"
"What number are you calling?"
(Meaning, "None of your—business!"
"MYrtle 7-6693!"

Wham goes the receiver.

"Hello" is just about as time saving and meaningless as tooting your car's horn in a traffic jam - it gets you nowhere fast! It just irritates others.

* * *

WRONG NUMBERS. When someone gets this nervous individual as a wrong number, he is a moron, an idiot, a dolt. Our friend is convinced the calling person is wilfully annoying him. When the wrong number is repeated a few minutes later, WOW, Mr. Nervous' temperature rises until it boils over the top. In no uncertain terms our friend berates his wrong number nemesis, even though perhaps the calling person has not sought him out as a wrong number.

A third repeat—and Mr. Nervous shifts into high. He jerks the telephone off the cradle and, not waiting for the voice from the other end of the line, shouts, "You bother me again and I'll crawl through this receiver and chew off your ear," or some such inane remark. Then he slams up the handset, his ego, if not satisfied, is somewhat appeased.

Imagine, if you can, the next day when "his honor" discovers to his horror, the third call had not come from the wrong number imp. Instead, a contractor had happened to buzz the line at the precise moment to give him a large order for materials. His consternation deepens when he learns that a competitor was given the order.

It is the same with a "road hog." Sooner or later he ends up with a crumpled fender, feelings and bones and regrets from a hospital bed that

FACTS & FICTION

about polyethylene insulated-jacketed telephone cables

Q. Is polyethylene insulated-jacketed telephone cable easy to install?

A. Yes. Its light weight and flexibility make handling and installation easier . . . save on labor costs. Readily distinguished color-coded polyethylene insulation speeds hookup and maintenance of multi-conductor cables.

Q. Do cable access points have to be hermetically sealed?

A. No. The moisture resistance of polyethylene insulation and jacketing eliminates the time-consuming job of hermetically sealing cable systems...thus the use of ready-access distribution terminals saves time and costs during installation and maintenance.

Q. Does polyethylene insulated-jacketed cable become unserviceable if damaged by storm?

A. Because it offers exceptional moisture resistance, only those conductors actually damaged go out... while the others remain in service. With absorbent pulp-insulated singles, the entire cable, more likely than not, will short out. And that means a major repair job... turns a routine job into an emergency "rush."

Q. Does polyethylene insulated-jacketed cable have good, low-loss electrical characteristics?

A. The best... The excellent low-loss characteristics of polyethylene singles insulation, maintained over a wide frequency and temperature range and in the presence of moisture, make possible lower capacitance unbalances, reduced cross-talk and noise level... important performance "plusses" which contribute to reduced system net losses.

Q. How much abuse can polyethylene insulated-jacketed cable withstand?

A. The tough jacket of polyethylene provides telephone cable with outstanding protection against abuse encountered during storage, installation and service. Resistant to weathering, stress cracking, abrasion and corrosives... telephone cables insulated and jacketed with BAKELITE polyethylene have been in operation for ten years without evidence of failure. Suitable for use in aerial, duct, above-ground and buried systems.

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he had ever gotten the idea that all roads were for his use only.

* * *

"EVERYBODY'S CRAZY BUT ME." Why is it, when our friend slides in behind the steering wheel of an automobile, he sometimes becomes a fanatical member of the "Everybody-is-crazy-but-me club?" He grows impatient the minute he puts the key in the ignition lock and begins to resent all forms of driving by others. His nervous urge to "get going" causes him to spring out from curbs, jump the yellow signal on a stop light, speed up to pass all cars ahead and lead the parade, even though he turns into his driveway just 3 feet in front of the car he just zoomed around.

When the driver ahead is a little slow on the take off as the light turns green, Mr. Impatient bangs down on the horn ring, letting out a blast that frightens the daylights out of the fellow ahead and causes him to ram into the bumper of the car in front of him. Our friend delights in backing out of his driveway into traffic with a flourish, putting the burden of safety upon the car that is approaching which is driven by a man as nervous and impatient as "his honor" himself. Yes, Mr. Impatient must devise many off-color pranks to stay a member in good standing in such an exclusive club.

One can almost hear Mr. Nervous laughing in glee as he drives up to a corner in a wild rush that scares the shoes off the foot traveler who has just reached midstreet and makes the final spurt to safety that leaves him upended on the curb, breathing a prayer of thanks because his scalp is still on the top of his head and not decorating a bumper.

* * *

SAME WITH TELEPHONE. Our friend oftentimes carries this same nervous manner into his use of the telephone. When he wishes to attract an operator's attention he jiggles the cradle-bar so rapidly it sounds like grandma's clicking knitting needles—too fast, much too fast for the equipment in the central office. So it just doesn't pass along the flashing signal. When the dial tone is slow, Mr. Impatient goes into a tizzy and the receiver-bar flashes like busy castanets. Of course, the dear fellow doesn't realize that dial tone has arrived during the interim of flashing and a part of the jiggle goes into a wrong number.

After three or four rings our gentleman hangs up, thoroughly disgusted, blaming the service for his anomalistic tendencies even though a moment's thought would have brought to memory, that his business associate, the called person, might have been busy at the moment and unable to answer the telephone as promptly as usual. Then, too, he might have been as thoughtless as someone else we could mention, who used the other fellow's time as though it belonged to him and delayed answering his telephone until he had finished his last few words of dictation to his secretary. Yes, "his honor" has accumulated many little telephone discourtesies over the years which have no value at all as time-savers in this busy world of ours.

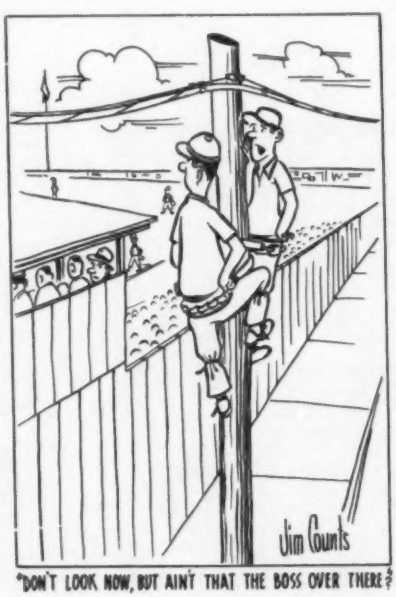
* * *

OVERSHADOW JOB PRESSURES. There are many causes which bring about heart ailments, but none act as quickly and as surely as do impatience and a case of nerves. These two idiosyncracies far overshadow job pressures. Loss of temper attacks the sensitive timing of the heart, causing it to race at excessive speed, bringing wear and tear on the bearings and a shorter life to the owner.

Impatience is like stopping at a red signal and pedaling the accelerator with a nervous foot. A lot of gas is wasted, but all the fuming gets a person nowhere—but fast!

Anger and the shouting, snarling voice over the telephone, cause the transmitter to choke up and blur the speech; besides it is hard on the blood pressure of those on both ends of the line. It is similar to blowing the automobile horn in heavy traffic, which brings resentment, lifted eyebrows from nearby motorists and frowns from passersby on the sidewalks—nothing else!

Failure to answer a telephone call with an identifying phrase goes hand in hand with the motorist who fails to signal a stop or turn on a busy street or highway. The results can be disastrous in either case. One can bring about strained business relations, the other personal injury.



"DON'T LOOK NOW, BUT AIN'T THAT THE BOSS OVER THERE?"

* * *

TELEPHONE TRAINING. It is the customer's responsibility to educate his people to become more telephone-wise, if the customer is to get out of the equipment all he is paying for. Only through interest and support of management can the full benefits of telephone service be realized. Fast, acurate and courteous service can be obtained only if a sound service perspective is understood by the people using the telephone.

Slow answers to a telephone promote an unfavorable impression of a firm and irritate the calling person—just like the "car strollers" who keep just under the minimum speed limit on a busy highway can cause all sorts of problems to the motorists behind them who have had to go into long queues because of the sauntering motorist leading the formation.

Automobile "tail-gating" causes more lost time accidents than any other driving misdemeanor, just as unsatisfactory speech and manner over the telephone increases the possibility of error, customer irritation and loss of business.

* * *

SAVING LIVES AND SALES. Discourtesy or impatience when talking over a telephone or driving an automobile, is an unforgivable breach of etiquette. It frays tempers and befogs clear thinking. More sales are lost over the telephone and more lives are taken on the highways because of discourtesy and impatience than from most sources.

One manager of a business once told me he had quit buying from a certain wholesale house because of the bad treatment he received when giving an order.

A good friend of mine not long ago seemed to change from a normal human being into a "maniac" when he would slide under the steering wheel of his car. He was lucky for a long time, which really was unfortunate for him. One morning, as he was hurrying to work, he blasted his horn in raucuous impatience at the driver in front of him because he didn't speed ahead on the yellow change signal. He so startled the poor fellow that

(Continued on page 48)

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Detailed scores available from Reliable Electric Company (Utilities' names withheld)

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Regulatory Aspects of Satellite Communications Systems

By MAX D. PAGLIN*

IT IS RECOGNIZED that one of the major national objectives of the United States, in the development of peaceful uses of outer space, is to bring into existence a commercial communications satellite system as soon as possible. The necessary experimentation, such as the forthcoming Telstar shot, is going forward and there is every expectation than an initial commercial system should be operational by 1966.

The ability to use space satellites to relay communications over long distances is a development of the greatest importance to our nation. It is not only a most significant advance in communications technology, but provides us with an unprecedented opportunity to demonstrate to the world our desire that space be used to the benefit of all mankind. We shall be able, in cooperation with other nations, to increase greatly the capacity of existing world-wide communication networks and thereby accommodate the rapidly growing volume of international public correspondence. We shall be able to institute, on an international scale, new and expanded telecommunications services, such as transmission of high-speed data and television, which are now provided domestically. Space communication also promises to make possible direct communication on an economic basis with the newly-emerging nations and the smaller countries of the world.

Highest Priority

As most of you know, President Kennedy has characterized this program as one requiring the highest priority. To this end, under the aegis of the space council, chaired by Vice President Johnson, the interested agencies of the government, including the National Aeronautics & Space Administration and the Federal Communications Commission have been cooperating with each other and have been coordinating their efforts in this field for some time. Commissioner T. A. M. Craven, who spearheads the FCC space team, addressed the first conference last year at Tulsa, Okla. and discussed in some detail the background of this government's intensified activities in space communications and the progress made to that date.

The coordinated program is going forward under policy guidelines enunciated by the President in July 1961. They will govern the establishment and operation of a commercial space communications system, to be owned and operated by regulated private enterprise, in keeping with the traditional free enterprise philosophy under which telecommunications services of this nation have been so successfully conducted. Since, as the President recognized, only one commercial space communication system will be technically and economically feasible for the foreseeable future, the system must accommodate at least the following policy requirements:

- It should provide for potential global coverage.
- It should be open to participation of foreign nations through ownership and use.
- There should be non-discriminatory use of, and equitable access to, the system by all authorized communication carriers in the United States.
- There should be effective competition in ownership and control and in supplying goods and services required by the system.
- And, finally, fully adequate regulatory controls must be provided to assure the development of an efficient and economical system at reasonable rates.

Mindful of the sense of urgency with which our Government is approaching this matter, a number of bills have been introduced in Congress, and extensive hearings have been held before committees of the House and Senate dealing with the problems inherent in the establishment of an operational system. Legislation was passed by the House of Representatives on May 3 entitled the "Communications Satellite Act of 1962" (Report No. 1636, Apr. 24, 1962 on H. R. 11040, House of Representatives, 87th Congress, 2nd session), and similar action is expected on the Senate side. There is every indication that legislation on this subject will receive favorable action by the Congress before it adjourns this summer.

Briefly, the legislation under consideration is designed to accomplish the policy objectives which I have already outlined. It provides for the formation of a private corporation, the ownership of which is to be divided equally between authorized carriers and the public-at-large. It sets forth in detail the responsibilities of the President, NASA, and the FCC in relation to the proposed corporation and the communications satellite program as a whole. And it incorporates a number of specific provisions designed to strengthen the regulatory authority of the Communications Commission.

Against this background, let me highlight some of the major, and, I

*Mr. Paglin, general counsel for the Federal Communications Commission, delivered this address recently at the Second National Conference on the Peaceful Uses of Space, in Seattle.

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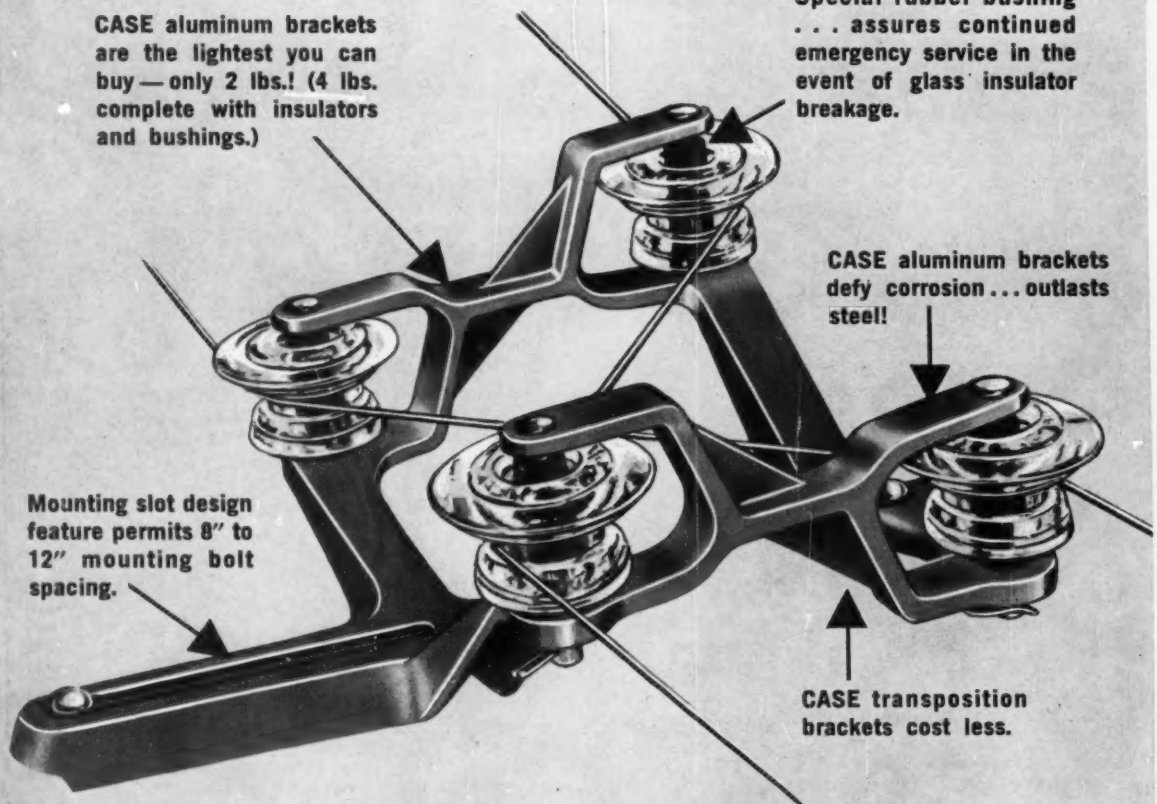

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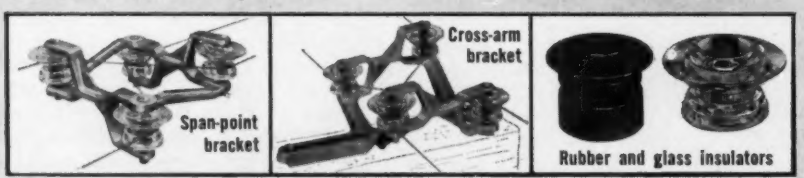

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think quite novel regulatory problems which the Commission will face when the corporation comes into being and begins the challenging task of orbiting an operational global space communications system.

Only One System

First and foremost, will be the regulatory problems stemming from the fact that, initially and for the foreseeable future, there will be but one system. To accommodate the interest of all international carriers, the legislation authorizes, under appropriate safeguards, a joint venture in which companies, otherwise directly competing with each other, will now be permitted to join hands in this common undertaking. While every effort has been made to take advantage of the benefits of our private enterprise system, the bill also contains a number of specific limitations on how the corporation will function, to protect the public interest in securing efficient and economical service.

Commission Given Responsibility

For example, while the corporation will be principally responsible for constructing and operating the system, it is expected to make provision for effective competitive bidding in procurement. To this end, the Commission is charged with the responsibility of issuing appropriate rules and regulations to insure that the contracting procedures used are fairly designed to achieve that objective.

This, of course, has been the traditional practice in government procurement; but it is the first time, to my knowledge, that this salutary principle will be required of a private corporation. Moreover, it is also the first time that an independent regulatory agency will be charged with the statutory responsibility of assuring compliance with free competitive bidding procedures by a regulated licensee.

Even in the well-established field of rate regulation of public utilities, the concepts embodied in the legislation will present the Commission with challenging new problems. The plan envisaged is unique in the sense that the corporation will not serve the public directly, but rather will be servicing international carriers who, in turn, will serve the public. This is what is meant when we speak of a "carrier's carrier" —one who, in effect, is a "wholesaler" of communications service.

Moreover, the capital investment in orbiting an operational communications satellite will be high at the outset, and it will be some time after the system becomes operational before its capacity will be in use on a fully economic basis. So, it is fair to predict that rate-making procedures will be a thorny problem and one which will require perhaps some new concepts and novel approaches by the Commission.

Similar to Existing Facilities

In this connection, it must be remembered that communications via satellite, though a new technology, is essentially but another means of relaying long distance communications. It will perform much the same function as do existing cable and radio facilities of our international common carriers. Under no circumstances should it replace existing systems, which must be maintained by these carriers to afford diversification of facilities and routing, needed to guarantee continuity and security of service under all conditions between the United States and overseas points.

Therefore, from a service standpoint, the utilization of satellites by any common carrier will require technical and operational coordination and integration with its existing modes of communication. Thus, the legislation provides that the Commission, with the advice of NASA, shall approve the technical characteristics of the system and shall insure such compatibility. I am certain that this audience, in particular, will appreciate the regulatory difficulties which may be encountered in keeping pace with the rapidly developing space technology.

I should also give special emphasis to another facet of regulation of the proposed corporation. The bill not only requires that there be equitable access to, and nondiscriminatory use of, the satellite system by authorized carriers, but also contains significant provisions respecting the ownership of the stock of the corporation.

Transfer Stock

In addition to the statutory division of stock between the carriers and the public, and the accompanying limitations on domination and control by any one group, the Commission is authorized to compel existing carrier-owners of stock to transfer shares to other carriers who wish to participate. In this regard, the legislation empowers the Commission, after notice and hearing, to determine the number of shares to be so divested and to fix the price thereof.

Such determinations are to be reached in the light of the estimated proportionate use to be made by the new carrier of the corporations facilities, and in keeping with the public interest and the purposes of the Act. It would not be unreasonable to predict that such proceedings may be highly complicated and difficult to resolve.

A further important regulatory responsibility is proposed to be given the Commission, which has not heretofore been exercised in the international field—although use has been made of this authority in the domestic communications field. The bill requires that, where the secretary of state, after obtaining the advice of NASA as to technical feasibility, determines that a circuit to a particular foreign point is required in the national interest, the Commission shall forthwith institute proceedings under Section 214(d) of the Communications Act, to compel the establishment of such circuit by the corporation and the appropriate United States carrier or carriers.

Broader Problems

Up to this point, I have been discussing those regulatory problems which affect primarily the Satellite Corporation itself. I shall now touch upon some of the broader underlying problems, the solution of which are vital to the ultimate success of the venture.

For example, it is contemplated that foreign nations will participate in ownership and use of the satellite system, by sharing in the cost of the satellites and by constructing earth terminal stations in their own countries. Further, it is contemplated that such ownership will entitle the foreign nations to use the satellites for traffic between their countries and other foreign points. All of this will require a maximum of cooperation and understanding among nations in the development of arrangements, some of which may be most complex, so as to provide equitable and efficient sharing.

Prime Elements

One of the prime elements of successful international sharing will be a fair and technically feasible plan of channel allocation and use. The limited nature of available frequency space is a matter of common knowledge which hardly warrants mention before this group. I know that many of you have been most active in the discussions and negotiations which have taken place in anticipation of the Extraordinary Administrative Radio Conference scheduled for 1963 in Geneva. That conference will consider the allocation of frequency bands required to support both research and operational

(Continued on page 48)

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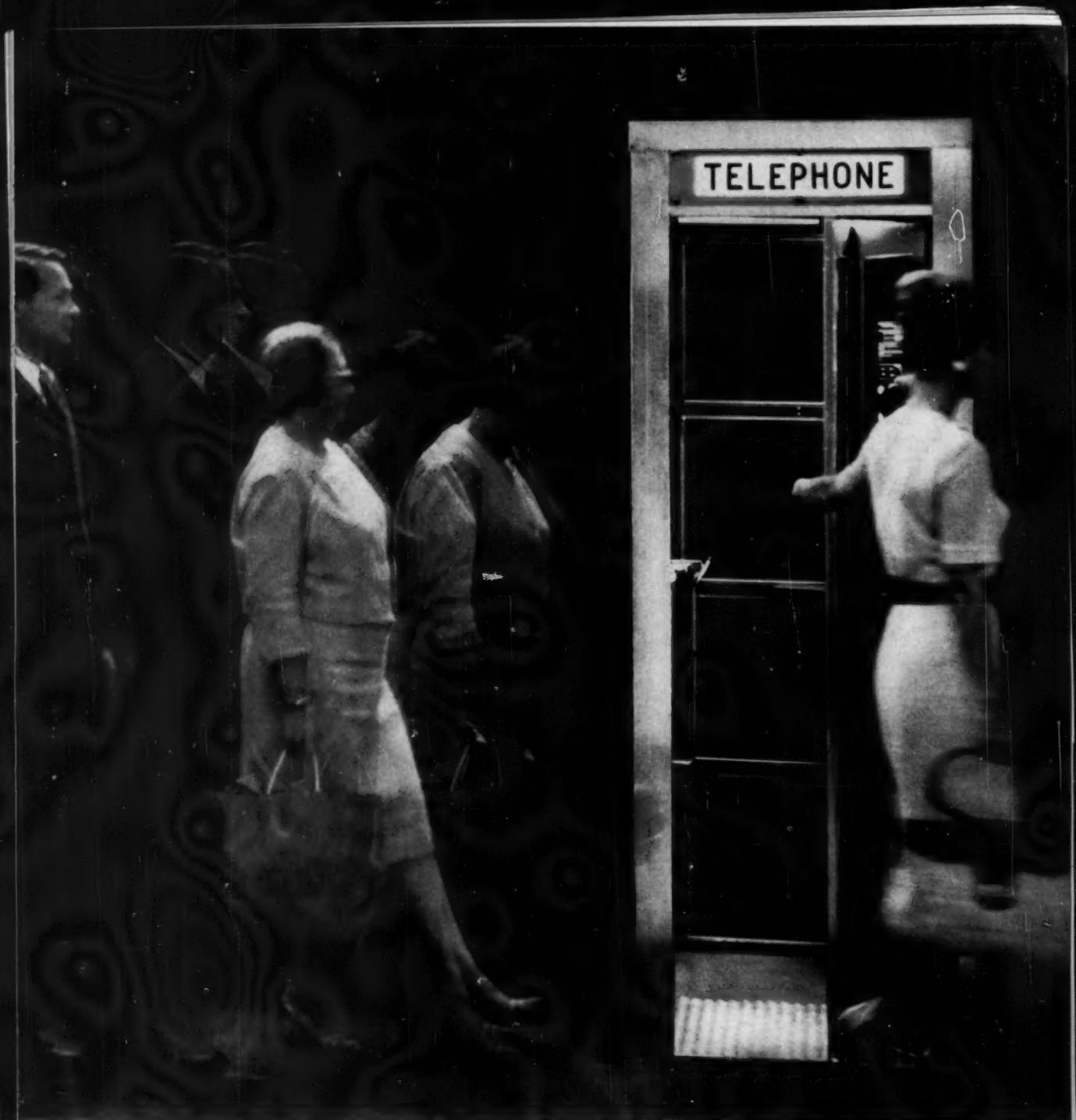

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New Developments in Telephony

By RAY BLAIN

THIS IS THE third article in a series describing various new items of equipment and their application in telephony. The second article appeared in the June 16 issue.

Readers desiring additional information on any of the products described should write the manufacturers or TELEPHONY.

SECRETARIAL ANSWERING UNITS WITH ELECTRONIC SIGNAL (Fig. 12). An electronic signal that responds to all standard ringing frequencies is a feature of the new types 2A, 2B, and 2C, secretarial answering units, now made available by Automatic Electric Co. These units enable a secretary to answer calls from 6, 10, and 20 lines, respectively.

Comprising a transistor oscillator and a transducer, the new signal equipment is assembled on a printed wiring card only 3 inches by 4¼ inches in size, and fits easily into these streamlined units. A volume control is provided which is to be adjusted by the serviceman at the time of installation to suit the customer's requirements. The transistor oscillator produces a tone of ample volume that is heard through a Type 810 receiver mounted on the back of the unit.

Each incoming call is signaled by a high-brightness lamp behind a lens-type lamp cap which assures visibility, even in a brightly lighted office. The combination of visible and audible signals assures prompt answering of all calls.

•

TWELVE-CHANNEL SUBSCRIBER OR TRUNK CARRIER (Fig. 13). The Stromberg-Carlson's 660 Subscriber Carrier permits operation of up to 12 additional channels on one pair of wires already employed in typical multi-party service. Stromberg-Carlson's 665 Trunk Carrier provides up to 12 inter-office circuits on a two-wire or four-wire physical voice frequency circuit already in use. Trunk signaling options provide compatibility with all standard telephone exchange requirements.

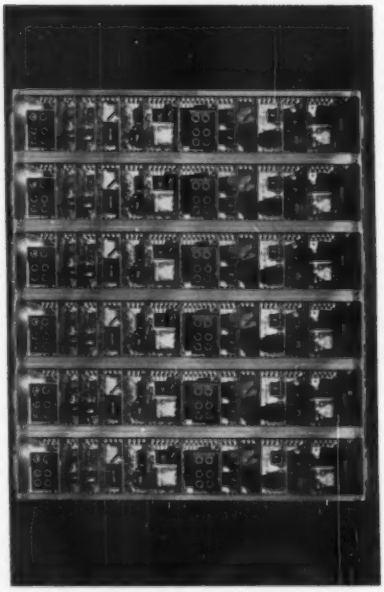


Fig. 13 Twelve-channel subscriber or trunk carrier.

Both systems may be ordered in the capacity desired, and additional channels added at any time without disturbing existing channels in service. Plug-in assemblies make possible a wide variation in configuration to meet plant-in-service as well as to simplify maintenance.

Ringing can be provided as bridged or divided, using coded, harmonic, synchromonic or decimonic systems, or superimposed ringing, coded or non-coded.

Solid state techniques, with interchangeable plug-in cards, are employed. Design permits mounting a 12-channel system with its common equipment in 26¼ inches of vertical

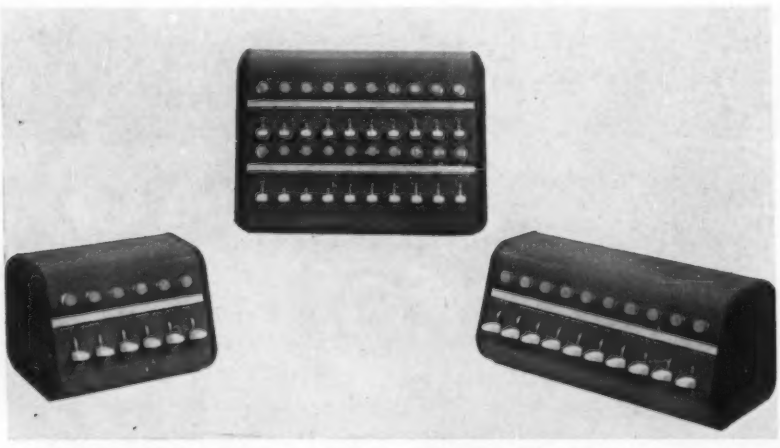


Fig. 12 Secretarial answering units with electronic signal.

space on a standard 19 inch rack. These systems operate on either 48 or 24-volt battery.

•

MULTIPLE PAY TELEPHONE UNIT (Fig. 14). Tel-Plastic Division of the Woodman Co., Inc., announces a new multiple pay telephone unit known as the TP6 Islander.

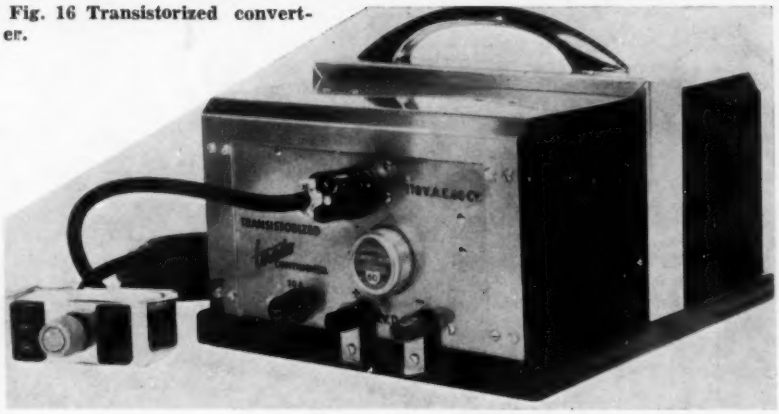
This unit accommodates four pay-

Fig. 14 Multiple pay telephone unit.

stations. It features illuminated signing from all directions, tamper-proof lighting for night use, portable as well as permanent installation and minimum space requirements.

The base and center post of the unit are made of reinforced sheet metal. The metal work is finished in gray baked enamel. The dividers, light diffusers and dome are of acrylic plastics. The lettering is silk screened inside the dome to discourage vandalism. The width at the widest point is

Fig. 16 Transistorized converter.



32 inches, the height is 78 inches, and the approximate weight 230 pounds.

•

CABLE BUILD-OUT UNITS (Fig. 15). The Communication Equipment & Engineering Co.'s main frame mounted cable build-out capacitor units are equipped with "self healing" Metalized-Mylar capacitors. These units are designed to withstand repeated high voltage surges.

One C600C-5 unit provides build-out for five lines. Four of these units mount in one C600B build-out capacitor assembly. Units may be ordered separately to provide for initial requirements and economical expansion. Each set of five terminals provides line build-out from .0021 mf to .0590 mf. This is equivalent to 133 feet and 3,760 feet at these values.

•

TRANSISTORIZED CONVERTER (Fig. 16). A dual transistorized unit, which converts 12 volts dc (storage battery) to 110 volts, 60-cycle, has been announced by Terado Co. The converter has a capacity of 550 watts continuous, or 600 watts intermittent service. A remote control unit is equipped with a variable ac output switch and a signal light that indicates the proper ac output. The output is completely filtered and can be used to operate tape recorders, dictating machines, etc. The 60-cycle frequency is maintained to an accuracy of plus or minus one cycle regardless of the changing load or input voltage.

The unit is housed in a copper clad steel case. It is furnished complete with remote control, cables and battery leads. It is also equipped with an electric fan to provide adequate cooling. The case is 10¾ inches wide x 6 inches in depth x 6 inches high. The shipping weight is 30 pounds.

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SELECTIVE FILTER (fig. 17). The Model TF selective filter by Instru-

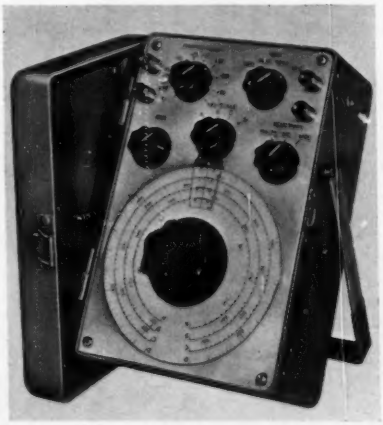

Fig. 17 The selective filter.

ment Laboratories Corp., has a frequency range from 3,000 cycles to 600 kc in four overlapping ranges. This provides a total scale length of 45 inches. It has filter selectivity, with pass bands of 150 cycles—2,000 cycles and broad band. This unit is completely transistorized with self-con-

(Continued on page 52)

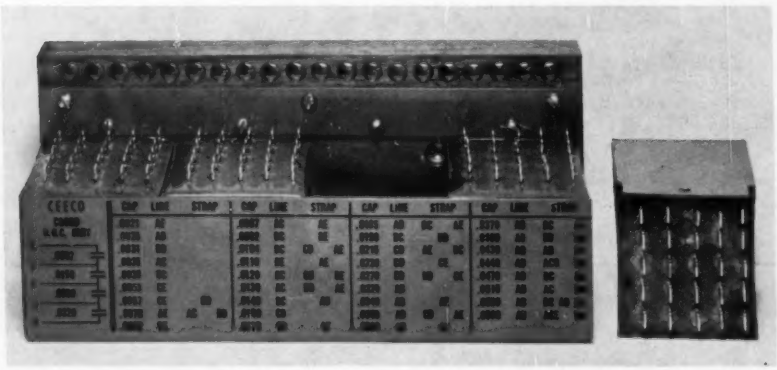

Fig. 15 Cable build-out units.

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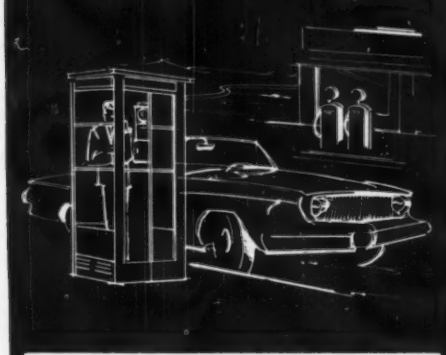

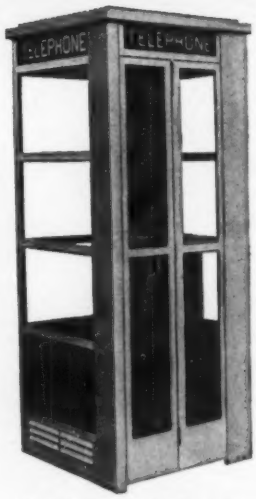

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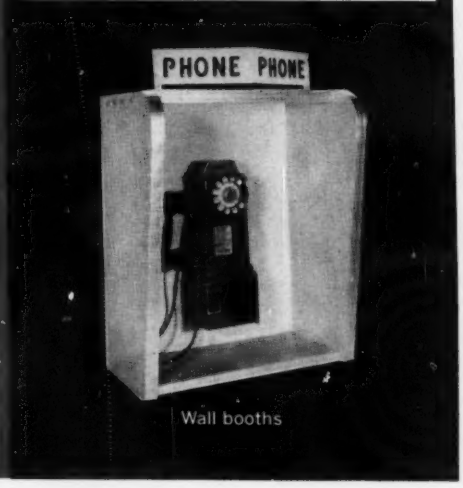
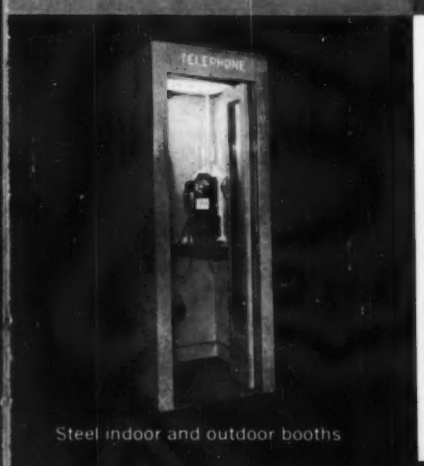
Wood indoor booths



Wall booths



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AUTOMATIC ELECTRIC
Subsidiary of
GENERAL TELEPHONE & ELECTRONICS
GENERAL SYSTEM

the Woman's Place

by Helen Hardin
Associate Editor

A DREAM AND PLENTY of enthusiasm, plus many hours of volunteer work, have enabled a group of 13 General Telephone Co. of Michigan secretaries to make a creative and constructive contribution to their company, and in the bargain, to serve their women associates richly.

Starting 18 months ago, the Gen-Tel secretaries began energizing their ideas into a 322-page manual. The result is a clerical guide containing everything from company rules and procedures to human relations tips.

GENERAL OF MICHIGAN President T. A. Saunders praised the group identified with the manual called "Secretaries in General," stating, "They have created a tool that will aid the entire company."

This freshly-published company manual, which presents rules and procedures heretofore passed verbally from person to person, was developed by the group of secretaries through monthly meetings and hours of extra-curricular effort.

Included in the red-covered volume, General reports, is a discussion of the General System and of General Telephone Co. of Michigan, Muskegon. The topics of human relations, modes of dictation, transcription and filing, telephone techniques, and correspondence procedure are covered in practical detail.

One entire section of the manual is composed of a collection of forms used throughout the General company, with an explanation of each form.

Another section contains a vocabulary of telephone terms together with their Gregg, Speedwriting and Pitman shorthand outlines.

EDITOR'S NOTE: This last feature of the manual especially will be a boon to the many women telephone employes—in supervisory, administrative, and clerical posts—for they will surely welcome these secretary-inspired helps. Whether milady is just out of school or college, or whether (having reared a family and returned to the business world) she has had a "brushup" in typing and shorthand, she will say, "Ah, this is for me!"

There is the lighter side to the manual, too. Answered are some of the questions that have bothered secretaries for decades, such as: "What should I do when someone stands behind me and reads the material in my typewriter, or on my desk?" . . .

"How do I discourage office gossip —choosing sides among girls?" . . .

"What should I do when my boss leaves the office without informing me where he is going and when he will return?" . . .

"What should I do when my supervisor is speaking on the telephone and an important call or long distance call comes in?"

IN ADDITION, there are tips on making travel arrangements, maintaining the supervisor's library, handling the supervisor's personal matters, and even advice on good office grooming.

As for the girls who developed the manual, they feel that management as well as they will benefit from the clerical manual. They believe it will help secretary, stenographer and clerk perform their jobs more efficiently and proficiently, because they will take more pride in job and company if they understand not only *how* to do something, but also *why*.

The "Secretaries in General" group, at General of Michigan includes: Florence Asp, Kay Houghteling, Evelyn Beaumont, Eleanor Larsen, Betty Bugbee, Kathy Moss, Barbara Bunnell, Carolyn Mulder, Virginia Ebelt, Milly Stevenson, Elaine Haglund, Barbara Vanderstelt, and Gertrude Westveer.

WITH THE NUMBERS of women increasing on American payrolls, we read recently in *Women's Business* that "two-thirds of American women would like to go to work tomorrow, but there are no jobs for them." This seems odd when the facts verify the statement that one of every three workers today is a woman.

Among the largest employers of women, of course, are our nation's telephone companies. It is reported that Illinois Bell Telephone Co. has 19,000 women employes.

THE VETERAN SECRETARY or stenographer recalls when she was first confronted with the problem of changing from a manual to an electric typewriter. Doubtless, with some apprehension, she approached this workaday adjustment, but conquered it without too much delay. Now that she know the delights of such built-in fatigue insurance, she will chuckle when she views late model typewriters which can change a ribbon in a whisk, leaving her hands clean. The inventors have thought of everything, it seems.

THIS BEING THE SEASON for launching new careers, it is apropos to inquire what progress is being made by women engineers and scientists in communications areas. What sort of preparation does a woman need to qualify for a job, for example, as a physicist in a telephone laboratory, such as Bell Telephone Laboratories at Murray Hill, N. J.?

Dr. Elizabeth A. Wood, a physicist and authority on X-ray crystallography at Bell Labs, has written a booklet, "Rewarding Careers for Women in Physics," in which she tells of the excitement, difficulties, and rewards of the woman physicist who is a full-type employe, and who may also combine her career with marriage.

Becoming adjusted to scientific disciplines is basic for the woman in this work. Dr. Wood, with the aid of the staff of the American Institute of Physics, has reported findings from consultation with several prominent women scientists.

DR. ELMER HUTCHISSON, director of the institute, states, "Unless we attract more women to high school, undergraduate, and graduate study in physics, we can never hope to realize the full potential of our supply of people talented in science. Without the help of dedicated and informed women physicists, our position as a nation in scientific research will not be as strong as it should be."

In the booklet, Dr. Wood sets forth the opportunities offered, and the problems facing women in becoming physicists. Lest the term, "scientific discipline," seem too grim, she addresses herself discerningly to women: "If you ask a group of physicists why they like their work, the word 'fun' will turn up in the first few sentences. If, after studying physics, you share their enjoyment in figuring out the reasons for things, you will feel at home among physicists and be welcomed by them."

In addition to the opportunities in physics research, the booklet points out that new career opportunities which are challenging and rewarding are now opening up in astrophysics, biophysics, and in the ever-expanding communications fields.

REGARDING ACADEMIC preparation, Dr. Wood says the girl student should first lay a firm educational foundation, including languages, logic, and English composition, in addition to mathematics and science.

"If there is an inspiring teacher in your physics department," Dr. Wood advises, "take that teacher's course, even if it was not in your original plans. Such a teacher can give you something of great value that you can get in no other way."

The years of graduate study in physics, although they look formidable, "can be years of good fellowship and absorbing activity," she adds. "Although the doctor's degree is not a prerequisite to getting a job in physics, the best opportunities for women, as for men, are offered only to physicists with Ph.D. degrees. . . . *But the Ph.D. degree by itself will not guarantee you a job. The only guarantee of a job is your own competence and effort.*"

Dr. Wood, realistically points out that there are fewer opportunities in physics for women than there are for men. One reason is that many young women in physics laboratories have left to get married after having been trained for the job. In addition, some women have been "supersensitive" on the job.

"ON THE OTHER HAND," she writes, "a girl who is a good sport and does a workmanlike job along with the rest of her colleagues will be treated on an equal footing with the men, and she will be paving the way for other women physicists.

In addition to the comments of Dr. Wood, these cogent career pointers were offered by women scientists which should be helpful to the girl student or graduate:

"Women, like men, can find employment in industry, non-profit research organizations, and government laboratories, and also in the academic field, teaching in colleges and universities or in secondary schools."

"Women may serve well as writers to interpret science to the layman—employment in a "fringe" field of physics where there is always room for the intelligent and informed individual."

"Where you work and what you do in physics will depend on your training and interests, but there is a great need for more and better physicists—both men and women."

EDITOR'S NOTE: Telephone companies often call upon the journalistic talents of their women employes, as in the personnel bureau, where bulletins and brochures are prepared.

"PHYSICISTS ARE WELL PAID today, *but you had better not go into physics for that reason.* Physicists are regarded with awe by many people and are front page news, *but you had better not go into physics for that reason.*

"Physicists have an all-pervading curiosity about every physical detail of the world we live in. The theoretical physicists enjoy doing the elaborate mathematical puzzles that are called theoretical calculations. The experimental physicists enjoy trying to design their experiments in such a way that the results will give unambiguous answers to the questions they are asking of nature. To share in this enjoyment, to make some part of the world of physics your own—that is the best reason for becoming a physicist."

•

The delicate question of a suitable response when an office newcomer is faced with a telephone inquiry need not become too great a worry, advises Chicago *Daily News* columnist, Gladys Blair, well-known advertising woman.

"Suppose you don't know the answer to a question asked by a telephone caller. What is the right thing to do? a writer asks.

Mrs. Blair answers: "Be honest. Say, 'I'm sorry. I don't know the answer, but I will find out" and "call

(Continued on page 49)

Pride in their achievement is evident as three General Telephone Co. of Michigan secretaries show company president T. A. Saunders a copy of the new 322-page clerical manual, titled "Secretaries in General", which they have created. A voluntary group of 13 Gen Tel secretaries worked more than 18 months to develop this manual, which covers company rules and office procedures, as well as human relations tips, and a listing of telephone terms, with their Gregg, Speedwriting and Pitman shorthand outlines. Left to right admiring three of the manuals, are: Miss Florence Asp, Mr. Saunders, Mrs. Gertrude Westveer and Miss Virginia Ebelt.

Courts and Commissions

Michigan Bell Opposes Deferred Tax Reserves

Use of an accelerated depreciation tax program, favored by other Michigan utilities, would result in serious difficulties for the Michigan Bell Telephone Co. and greater costs to customers, the Michigan Public Service Commission was told recently by Kenneth L. Moore, assistant company comptroller.

Mr. Moore explained that an accelerated depreciation program would necessitate detailed records on equipment. He noted that Michigan Bell last year put in and took out 1,200,000 telephones, and ended the year with a gain of 55,000 units. He further pointed out that company equipment is scattered across the state and subject to piecemeal additions, rearrangements and re-use.

The Michigan commission has been conducting hearings on whether to continue the policy of allowing accelerated depreciation, and whether it should be mandatory for all utility services.

Michigan Bell has never operated under the plan, and Mr. Moore said the company would oppose such a mandatory tax program.

The plan permits utilities to claim large amounts of depreciation in the first years after new equipment is acquired. Higher depreciation results in lower income taxes. The plan requires companies to deposit tax money saved to pay higher taxes resulting from lower depreciation deductions in later years. Funds for 13 Michigan utilities now total 142 million dollars.

The alternative to this plan is straight-line depreciation in which equal amounts are deducted each year of the life of the equipment.

Moore said the future of the law that makes accelerated depreciation possible is uncertain. But, he added, any piece of equipment placed under accelerated depreciation would have to remain under it for its entire life span, whether or not the law remained in effect. He said this also would result in higher record-keeping expenses than if the straight-line plan is used.

Under the straight-line method, Michigan Bell is permitted to employ "mass property accounts"—keeping track of telephones as a group, rather than individually.

Other Michigan utilities which have been represented at hearings conducted by the commission have argued in favor of the accelerated plan. They said it provided a source of ready, interest-free cash for expansion.

In commenting on the idea of setting aside money today for future tax bills, Moore added:

"If a large future liability exists, we cannot risk that liability without reasonable assurance it can be met. In view of the uncertainty of tax treatment, accounting treatment and rate treatment, we do not have such assurance."

Authorize Sale in Arkansas

The Arkansas Public Service Commission on June 2 authorized the sale of the Carthage Telephone Co. to the Allied Telephone Co. Seller was Amie Williams. (TELEPHONY, June 2).

Wisconsin Commission Asked Approval of Rate Increase

The Boscobel Telephone Co. has applied to the Public Service Commission of Wisconsin for a dial rate increase at its Highland and Avoca exchanges.

File Name Change in Wash.

The LaCrosse (Wash.) Telephone Co. on May 25 filed an application with the state for change of its corporate name to the Pioneer Telephone Co.

Profit Most Vital Factor

If you were asked to name the most important single factor in this country's economic progress, would your answer be, Manpower? Materials? Machinery? These are all vitally important spokes of the wheel, certainly. But, what makes the wheel turn?

It's a simple, logical answer: Profit.

Profits are vital to our business system as a whole and, therefore, to each and every individual—no matter how he earns his living. In our economy, a business is started with the expectation of a profit, and the economic health of that business is measured in terms of its profits.

Keeps Wheels Turning

Exactly what is this "expectation of profit?" It is nothing that can be held in your hand, put into a package, or weighed on a scale. Actually, it is a state of mind. It is a motive force that keeps the wheels of our economy turning and stimulates the constant search for better products, improved services, and better ways to live.

If one chooses to spend time, energy, creative ability, and money in creating a product or furnishing a service, he obviously should have an opportunity to earn a profit which adequately compensates for the risk involved. Profits, after all, are not guaranteed; "risk" can bring gain or loss—and without adequate gain, a business cannot survive or attract others who will invest in the enterprise and assure its continued growth and development.

Compensates for Risk

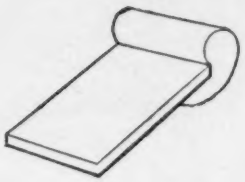
Profit is the return—after deducting all costs of doing business—to the person or company for the responsibility and risk involved in trying to meet the needs of other people. If those needs are to be met efficiently and at the lowest possible cost, the company must prosper.

But adequate profit does more than assure fair return to the owners on their investment. From the standpoint of the individual employe, adequate profits build a strong company, *real* job stability, and opportunities for promotion to better jobs.

Ups Living Standard

The continuing contribution to American life of this drive for profit can be seen everywhere, every day—in new and better things produced at lower costs which have raised our standard of living to one unequalled in the world. The profit motive is an integral part of Free Enterprise; it is the lifeblood of People's Capitalism.—from General Telephone Co. of California "News", January, 1962.

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

A NEW TYPE of coin telephone is now on field trial in the Norfolk, Virginia, area. It features a single slot, replacing the present three coin slots that have been standard for the past 50 years. The slot, located in the upper left corner of the housing faceplate, will accept nickels, dimes and quarters. A customer-operated lever is also provided for the release of stuck coins.

Another change is the location of the handset in the center of the faceplate similar to the wall telephone for the home. Other external features are two-tone gray housings, with chrome-finished accessories, and a more attractive display of information card material.

This new coin telephone also has a number of internal improvements. A notable difference is the replacement of the usual gong and chimes with electronically-generated tones for signaling coin deposits. The coin collecting mechanism has also been completely redesigned to provide maximum protection against the fraudulent dialing of calls.

This new instrument also has an improved locking arrangement for the upper housing and cash compartments door, all designed to make it extremely difficult for thieves to enter. The cash compartment will house either the standard coin receptacle or one with 50 per cent more capacity.

Twenty-four of these new coin telephones are on this field trial which is expected to last six months. From an initial production of 50 sets in 1962, and 60,000 sets in 1963, the output is expected to reach a capacity of 120,000 sets annually. Long range requirements call for over 1,000,000 sets during the first nine years of availability. The demand for the older coin telephones is expected to end by 1964.

•

The Federal Communications Commission requires that certain technical changes be made in mobile radio systems by November 1, 1963. This is the date that the new narrow-band standards become effective, and all transmitters must be in compliance with FCC rules. Receivers should also comply with the new requirements if the best performance is to be obtained in range, freedom from noise, minimum squelch bursts and freedom from adjacent channel interference. This is more likely to occur with split-channel assignments treated with the same degree of frequency coordination as the primary channels.

Over three of the five years allowed by the FCC for the transition of service from wide-band to narrow-band has now past. Since August 1, 1959, all newly licensed transmitters operating under Parts 10, 11 and 16 of the FCC rules have been required to meet narrow-band technical standards. New wide-band transmitters could only be installed if used to expand a system licensed prior to this date.

Inasmuch as any change from the old wide-band to the new narrow-band standards will require a certain amount of time, it is well to consider what change, if any, is necessary to carry out your plans in the near future. It might even prove desirable to consider trading in your old equipment in favor of today's modern designs. In addition, as a part of your up-grading and modernization program, evaluation should be made of the new transistorized equipment which is currently on the market as well as the partially transistorized designs now available. Regardless of your preference, however, it is well to begin planning now on the required changes prior to the deadline of November 1, 1963.

New coin telephone introduced by Western Electric now undergoing field trial in Norfolk, Va.

•

We have all heard pneumatic drills working in the streets and know that they can make terrific noise which is usually taken for granted since it has been generally understood that nothing could be done about it. Now, our good friend, Dermot Foley, sends us a clipping from the "Irish Independent", published in Dublin, which states that mufflers for these drills may soon be introduced in that country as a result of a recent experiment in London.

This experiment was carried out in a street by two workmen who dug a

hole with their drills heavily muffled. During the operation, the Secretary of the Noise Abatement Society checked with a meter and reported that unmuffled drills made five times as much noise as those which were muffled. The objective of the test was to interest contractors and public works bodies in the use of the mufflers.

•

We have often wondered who started the use of the word "hello" in answering the telephone. Now a magazine story credits it to Thomas A. Edison.

In the beginning, people used to say "Are you there?" or similar phrases when answering the telephone. Then one day, according to the story, Mr. Edison responded to a ring on his line by yelling "hello" into the mouthpiece. And now this most satisfactory word has gone around the world, being used even in Japan, Turkey, Russia, and the Pantagonia.

Actually, this is a good and easily understood word, and we could not suggest a better one.

•

The war on speed in many parts of the United States by law enforcement officers, safety groups, and others, has apparently brought gratifying results for the second successive year. The annual report on highway deaths and injuries, compiled each year since 1931, except for the war years, indicates that during 1961 there were 710 less deaths attributed to speed than a year ago.

Continuing the number one cause of fatal highway accidents, speed was blamed for 10,260 deaths last year as compared to 10,970 the previous year. This comes after a drop from 12,980 caused by speed in 1959. Also traced to this same violation were 946,600 personal injuries, down more than 50,000 from a year ago.

"Cross Talk"

This country was in better condition when we had more whittlers and fewer chislers.

•

A man who can laugh at himself will always be amused.

•

People who cough never go to doctors—they go to theaters instead.

•

Reformers are defined as people who were never permitted to poke the fire when they were young.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What electrical protection is required for a carrier equipment installed on open wire lines?

A. According to REA specifications, carrier equipment installed on open wire circuits may be severely exposed to lightning surges and to the possibility of contacts with electric power lines. It is usually impracticable, from the economic standpoint, to provide adequate dielectric strength and current-carrying ability in the carrier equipment to withstand surge voltages and fault currents that open wire telephone lines may experience.

REA carrier equipment specifications, therefore, state that the carrier components, which are subjected to surge voltages from the line either have: (1) sufficient inherent dielectric strength (i.e., 1000-volt rms minimum) to give them adequate protection with conventional protection devices; or (2) that the low voltage components be provided by the manufacturer of the equipment with special low voltage protectors affording up to the maximum breakdown of the conventional protector.

Carrier equipment operating from commercial power is subject to surges originating on the power lines. Therefore, it is necessary to provide surge protection on the power service; and coordinate the dielectric strength of components facing the power line with the breakdown characteristics of the surge protector.

The use of conventional air gap lightning arrestors, connected between the two sides of the carrier line and ground is generally recommended for excessive voltage protection to carrier equipment. Air gap lightning arrestors, however, cannot be relied upon to break down symmetrically on both sides of the line when a voltage surge is applied. Carrier equipment that meets the inherent dielectric strength required by REA specifications, and which is protected as described, should be capable of withstanding the momentary differences of the across-the-line potential which may occur from non-symmetrical breakdown of the protective gaps. Special protection against non-symmetrical breakdown of protective gaps is not required, unless specified and furnished by the carrier equipment manufacturer.

Equipment chassis and protectors at terminal and repeater locations should be effectively grounded to provide a means of dissipating high voltage surges into the ground and to provide paths to ground for power fault currents to operate fuse devices for overcurrent protection.

•

Q. When is humidity control required in dial switching equipment rooms?

A. When high humidity prevails, the equipment must be protected from moisture damage. High humidity is usually found in regions having conditions similar to those of tropical climates and may sometimes occur under adverse weather conditions in temperate zones, especially along seacoasts or in areas having a considerable difference between day and night temperatures.

Relative humidity—an expression of moisture content of the air—is the percentage of moisture actually present in a given volume of air compared to the maximum which the air can evaporate and hold. Heating the air increases its capacity to evaporate and hold moisture and, therefore, reduces the relative humidity. When air cools, its capacity to hold moisture is reduced, causing its relative humidty to rise. If warm, moist air comes in contact with cold equipment, the sudden cooling causes it to deposit its moisture in the form of dew.

To prevent moisture troubles in equipment, the relative humidity in the switchroom should be maintained below 60 per cent and never permitted to rise above 70 per cent. The use of hygrometers, one in the switchroom and one outdoors, is recommended to measure the percentage of humidity and to maintain it within proper limits.

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THE TRAFFIC PAGE

By WINNIE BURNETT

THE FACT THAT people are funny has been quite definitely proved by such aired programs as "People Are Funny". More recently that titillating program "Candid Camera" left no doubt in anyone's mind that people are indeed funny. But, people are also happy, sad, gay, melancholy, verbose or taciturn.

As human beings at home or at work we are mostly creatures of emotions. We emote ten times as much as we think. We are definitely sentimentally inclined. Of course, that sentiment may not be of the noble or romantic variety. Indeed, violent sentiment or opinion is expressed about as often as is tender or maudlin sentiment.

It is no wonder then that a better understanding of human behavior becomes ever more imperative in order to develop successful methods for fuller use of our human resources, and better techniques for leading people.

We have certainly learned that the American worker will do more and better work under good, inspiring leadership than under stern drivership. The 1962 manager or chief operator has a very different responsibility than the earlier managers and chiefs. This is due partly to the vast technological revolution of the 20th Century and to the evolution of the worker. Just think, about a hundred years ago some labor could still be bought on the auction block to the highest bidder. As a result of this evolution, the 1962 worker is certainly not servile; he is outspoken; independent in his thinking; and he is more openly contemptuous of abused authority.

A big per cent of difficulties with personnel is due to defects of personalities or character. This is true in the management group as well as in the non-supervisory group. Perhaps this is because there are so many roadblocks to better understanding. Don't think that such roadblocks are shown up only as the result of psychoanalysis. On the contrary, there are many barriers thrown up by instant judgment based on old superstitions. This sounds pretty far-fetched in our modern times, but most of us are guilty whether or not we are supervisors.

Some of the most common of these roadblocks to understanding and accepting a fellow worker or a new acquaintance sound almost like witchcraft measurements, but they are so camouflaged by every day usage that we fail to see the damage they can do.

"Small ears denote stinginess." Why not just say that small ears are more attractive than the donkey variety.

"High foreheads indicate intelligence." Could be just a receding hairline.

"Don't trust anyone who doesn't look you in the eye." Some eyes *I* don't care to gaze into.

"He has shifty eyes—don't trust him." Maybe his eyes are just dancing with the joy of having the pleasure of talking with you.

"He comes by it honest—the whole family is that way." Heredity gives us only two things: our existence and our biological equipment, which may or may not include a low native intelligence. Human nature is acquired, not inherited.

The unfortunate thing about these old saws is the fact that we so often use them—subconsciously use them in dealing with people, on and off the job. In other words, when we apply these old sayings to people, we subconsciously try to predict human behavior.

Few of us laymen would consciously try to predict human behavior, but we all have two minds, a conscious mind and a subconscious mind. Our conscious mind may do our real thinking for us, but our subconscious does numerous things for us every day without thinking. Our feelings and our attitudes stem from our subconscious minds. No wonder so many people seem to be two-faced when we are literally two-minded.

It may be comforting to remember that there are no two people on earth exactly alike; however, it is also true that no two people are entirely different.

We all need food and shelter and clothing, and most of us need security and praise and we need to be needed. Perhaps we should all try to know ourselves, then we may be able to understand other people a little better. At least, if we can't understand we can sympathize. And we can stop putting people in pigeon holes or slots. People are not easy to type or classify.

And, we *can* train ourselves and our employes in better and newer methods of operation to stay up with our technological advancements.

Traffic Quiz

1. **Q. What makes certain pencil marks "readable" by machines from Mark Sense tickets?**

   A. A high percentage of graphite and a reduced content of wax and clay causes such a lead mark to become conductive. That is, an even, continuous layer of these particles forms a conductive line.

2. **Q. Should the mark on a Mark Sense ticket be broad?**

   A. A dense black narrow line or mark is a better conductor than a broad mark because it is more

(Continued on page 48)

Magnolia DIVIDEND TRUCK MAINTENANCE PAYS OFF!

Magnolia Magna Lube sprays on long life softness to rubber moldings. Lubricates hard-to-get-at hinges with a detachable flex-extension tube, frees stubborn locks and retards rust.

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Magnolia Alum Coat affords a protective heat and rust resistant coating for radiators, blocks and brackets. Provides non-clogging spray application that dries in minutes.

Other Telephone Specialty Products:
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Magnolia Sun Resistor (blue-green tint)
Magnolia Rust-Rid (dissolving agent)
Magnolia Glass-Cleaner (dissolves bugs)

Batteries will last longer, perform better when kept corrosion free with Magnolia Saf-Gard. A protective spray-on coating of Saf-Gard will water proof ignition systems, protect chrome and resist exposure to salt and alkalies.

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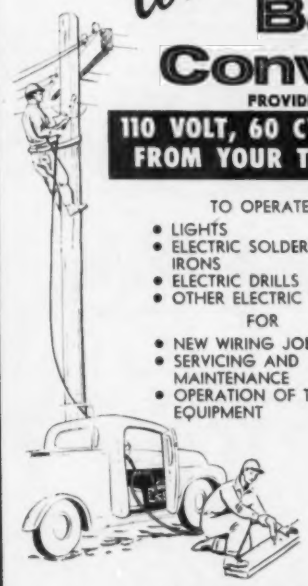

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WORK ON RELAYS?

Then you need this HANDY, COMPLETE **TOOL KIT**

18 TOOLS

EVERY TOOL NECESSARY FOR ADJUSTING, CHECKING AND TROUBLE-SHOOTING RELAYS

All 18 tools especially designed for RELAY WORK. Includes Contact Burnisher with extra blades, Spring Tension Gauge, Wrenches, Thickness Gauge Set, Inspection Mirror, etc. All in Vinyl Case.

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Write for bulletin and FREE copy of valuable book on "How to Service Relays."

P. K. NEUSES, INC.

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Bell System Opens New Museum Exhibits

The Bell Telephone System unveiled a series of exhibits at the Chicago Museum of Science and Industry recently featuring a dramatic demonstration of the U. S. Navy in simulated battle action, with atomic powered submarines seeking out their underwater foes.

Nearly a year in preparation, the exhibits also depict the history of telephone communications—from Alexander Graham Bell's first model to a display of what the picture-phone of the future might look like.

In the new displays, airplanes and naval fighting craft are seen "in battle," with shells bursting overhead. Included in the dramatization of U. S. Navy communications and enemy warning devices are electronic gun directors, plane-to-ship communications, sonobuoys (special buoys that radio underwater sounds of enemy submarines) and hydrophones (special underwater listening devices used to indicate location of missile capsules).

Visitors to the new section—just to the right of the Museum's main extrance—can see, as well as hear, the person they talk with on the picture-phone. They also can see themselves on a "monitor screen" built into the special phone.

Experimental models of the picture-phone have been in existence since 1957 when the first telephone audio-visual system was tested. The Bell System is continuing tests to determine how practical a picture-phone system might be.

The new display was opened at a ceremony attended by Rear Admiral Ira Nunn, USN, commandant of the Ninth Naval District, John D. deButts, president of Illinois Bell Telephone Company, and Daniel M. MacMaster, director of the Museum.

The exhibits add almost 50 per cent to the floor area previously occupied by the Bell System, one of the oldest continuous exhibitors at the Museum, giving it some 11,000 square feet on the Museum's main floor. More than 80 per cent of the Museum's 2,600,000 visitors viewed Bell's exhibit during the past year, according to MacMaster.

Also on display in the new section are several other "telephones of the future," including some with pushbuttons instead of dials; an historical collection of telephones used during the past 85 years; a dramatization of the widespread telephone network; and a demonstration of how the electronic central office of the future, recently used in a trial at Morris, Ill., will handle telephone calls.

Competition Theme of C. of C. Film Now Available

The Chamber of Commerce of the United States has released a new motion picture to help businessmen explain the benefits of competition to employes, students, and the public.

The title is "Competition in Business," and the film runs 13½ minutes. It was produced with sound, and is in color.

"Competition in Business" was prepared in cooperation with Coronet Films, Inc., producers of educational motion pictures. It is the story of a high school teacher who wants to explain the theory of competition to his students in terms of practical business operations.

The teacher calls on his friend, the head of a local manufacturer of home movie projectors, and the film is that company's version of "competition in business."

Five points are affirmed in the film's action:

Competition means better products for the customers.

Competition in business is both direct and indirect.

Competition means the best possible price to the customer.

Competition means more efficiency in production, packaging, distribution, and marketing.

Competition encourages research for new and better products.

The new film is available for rent or purchase, the U. S. Chamber states. Purchase price is $137.50. Rental for seven days is $10; $5 for three days.

For information about "Competition in Business" and other National Chamber motion pictures, contact the Audio-Visual Services Department, Chamber of Commerce of the United States, 1615 H Street, N. W., Washington 6, D. C.

An atomic-powered submarine is featured in a demonstration of the U. S. Navy in simulated battle action at Bell Telephone System's new exhibit at the Museum of Science and Industry in Chicago. On hand for opening day ceremonies were John D. deButts (left), president of Illinois Bell Telephone Co., Rear Admiral Ira Nunn, Commandant of the Ninth Naval District, and Daniel M. MacMaster, director of the museum.

McMahon Named Senior VP of Chase Bank

Thomas W. McMahon Jr. has been promoted to senior vice president of the Chase Manhattan Bank, president David Rockefeller announced on June 8. Mr. McMahon is in charge of a group of the bank's branches in mid-Manhattan.

Mr. McMahon joined the bank in 1947 and was assigned to the public utilities department the following year. While in this department Mr. McMahon was in charge of Chase Manhattan's telephone company financing program.

In 1951 he was appointed assistant treasurer, and in 1954 he was promoted to assistant vice president. He was transferred to the metropolitan department and made a vice president in 1956.

A native of Newark, N. J., Mr. McMahon received an A.B. degree in 1946 from Rutgers University and an MS degree in 1947 from the Columbia University Graduate School of Business. He studied also at the New York Institute of Finance and at the Graduate School of Business Administration, New York University.

From (G-V), the most experienced Time Delay engineers:

RED/LINE *Instant Reset*
for timing progress of calls, for trouble indicating and for ringing circuits

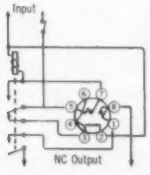
Features quiet, positive operation, long life, light weight, operation in any plane, wide range of temperature compensation

Of particular importance to the telecommunications industry is the increasing use of the G-V Red/Line thermal timing element, Type DM, for **instant reset** circuits. This timing device also features quiet, positive operation; long, trouble-free life; light weight; operation in any plane; and a wide range of temperature compensation.

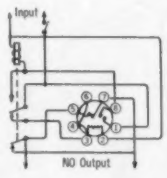
In such instant reset applications as ringing circuits, timing the progress of calls and trouble indicating, the timing cycle is ready to start again whenever the energizing power to the time is interrupted, even momentarily, either during the delay period or after its completion.

The Type DM, when combined with a small magnetic relay, provides this instant reset time delay in a highly reliable and economical form. Time delays from ¾ of a second to 6 minutes can be supplied. Heater voltages cover the range from 6.3 volts to 230 volts. Output circuits are completely insulated from input circuits.

THEORY OF OPERATION — The total delay interval is made up of a short heating interval followed by a longer cooling interval. The output contact operates only when the thermal element has passed through this entire heating-cooling cycle. Since the thermal element is now cool, it can repeat the cycle immediately. If the power is interrupted during the course of the timing cycle, all of the long cooling time and at least a part of the short heating time is repeated before the output circuit operates. This assures a new delay interval 75% to 90% as long as the full timing period. Once the output circuit operates, it remains operated as long as power is supplied. When power is interrupted, the output circuit returns instantly to its unopened condition.

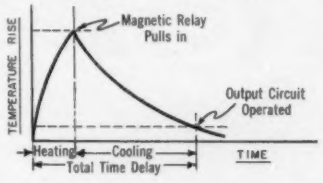


NORMALLY OPEN OUTPUT
CONTACTS:
1 AND 8 NORMALLY CLOSED
5 AND 7 NORMALLY OPEN
PINS:
2 AND 3 HEATER
NC CONTACTS OPEN BEFORE NO CONTACTS CLOSE



NORMALLY CLOSED OUTPUT
CONTACTS:
1 AND 8 NORMALLY OPEN
5 AND 7 NORMALLY OPEN
PINS:
2 AND 3 HEATER
CONTACTS 5 AND 7 CLOSE FIRST.

DIAGRAM OF HEATING-COOLING CYCLE



Red/Line instant reset relays are produced in both normally open and normally closed types, in the standard heater voltages and delay intervals listed below.

		6.3 V.		48 V.	
CONTACTS		NO	NC	NO	NC
TIME DELAY					
Setting Seconds	Standard Tol. ± %				
0.75	20	DM-7419	DM-7420	DM-7431	DM-7432
1.	20	DM-7421	DM-7422	DM-7433	DM-7434
1.5	15	DM-7423	DM-7424	DM-7435	DM-7436
2.	15	DM-7425	DM-7426	DM-7437	DM-7438
3.	15	DM-7427	DM-7428	DM-7439	DM-7440
4.	15	DM-7429	DM-7430	DM-7441	DM-7442
5.	10	DM-7323	DM-7324	DM-7345	DM-7346
10.	10	DM-7325	DM-7326	DM-7347	DM-7348
20.	10	DM-7327	DM-7328	DM-7349	DM-7350
30.	10	DM-7329	DM-7330	DM-7351	DM-7352
45.	10	DM-7331	DM-7332	DM-7353	DM-7354
60.	10	DM-7333	DM-7334	DM-7355	DM-7356
90.	10	DM-7335	DM-7336	DM-7357	DM-7358
120.	10	DM-7337	DM-7338	DM-7359	DM-7360
180.	10	DM-7339	DM-7340	DM-7361	DM-7362
240.	10	DM-7341	DM-7342	DM-7363	DM-7364
300.	10	DM-7457	DM-7458	DM-7459	DM-7460
360.	10	DM-7343	DM-7344	DM-7365	DM-7366

For other voltages write for PD-1011-1.

SPECIFICATIONS

Contact rating:
AC-Non-Inductive: 5 amps to 125 volts and 3 amps to 250 volts.
AC-Inductive: 1 amp to 250 volts.
DC-Non-Inductive: 1 amp to 48 volts.
DC-Inductive: ⅛ amp to 48 volts.

Contact life: Over 100,000 operations at full rated load.

Time delay tolerance: Delays are factory set. Voltage variations of ±10% will not change total delay by more than ±5%. Effects of ordinary ambient temperature variations are negligible.

Operating conditions: May be operated at ambient temperatures between 32° F and 185° F.

Socket: Fits any standard octal socket.

Protection: Thermal element has a dust-tight protective metal shell crimped onto base. Units are factory pre-set to required timings.

G-V Regional Field Engineers throughout the United States are available for consultation on time delay problems. For complete literature and/or assistance, write today to **G-V Controls Inc., Okner Parkway, Livingston, N. J.,** or call **992-6200** (Area code 201), **Mr. G. Compton.**

G-V CONTROLS INC.
LIVINGSTON, NEW JERSEY

SATELLITE REGULATION

Concluded from page 30

phases of the various categories of space radio communications. I would only add that the Commission regards the successful conclusion of that conference as one of the key elements in the early establishment of a truly effective global satellite system.

It should be emphasized that our experience over the years and the harmonious relationships which have already been established give every hope that the conference will be productive and effective.

It is a tribute to the nations of the world, whatever their political complexion, that, in the field of communications, treaties have been negotiated and their provisions observed in good faith. Because the world community holds to the one view that communications are the "life-blood" of international relations, I have no hesitancy in predicting that agreements will be reached which will assure a practical and efficient use of frequencies for space satellites as a supplement to existing communication networks.

Establishing a commercial satellite communication system will, as new uses emerge, develop and grow, have a formidable impact on social, political, educational and economic relations between the nations of the world. That is why the Commission regards the establishment of such a system as being of the utmost urgency and national importance.

TRAFFIC QUIZ

Concluded from page 44

likely to contain a continuous unbroken deposit of graphite.

3. **Q. Should a mark be strengthened by retracing until it is dense?**
   A. A single firm stroke is best.
4. **Q. Can a mark be erased successfully without "scrubbing?"**
   A. Yes. A few passes of an eraser over the entire mark will remove enough of the graphite deposit to eliminate conductivity.
5. **Q. Should several Mark Sense tickets be stacked into a pad to form a soft writing base?**
   A. No. A hard smooth surface is better.

TELEPHONE CAREFULLY

Concluded from page 26

he stomped down on the accelerator and shot out into the path of a car speeding to get across the intersection before the yellow light turned green.

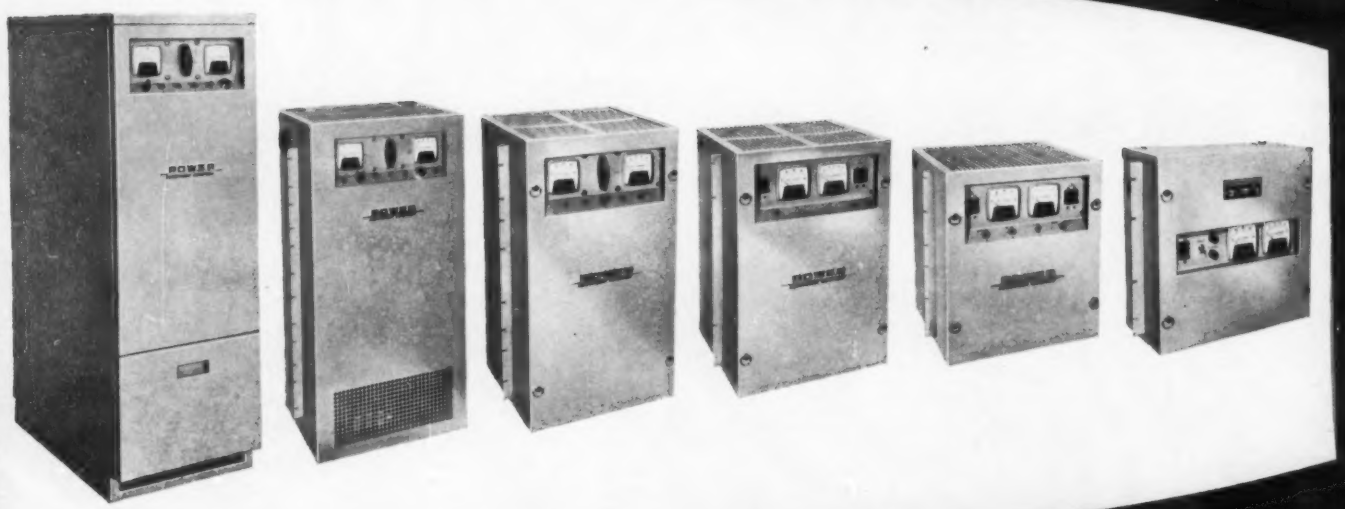
My friend waited until the ambulance arrived. Fortunately the injured men had only a long stay in the hospital while broken bones mended. My friend? Today he is the meekest, most careful driver on the highway. But he had to learn the hard way.

A man's caliber can be measured by the way he uses his telephone or drives his car. STOP! LOOK! LISTEN! The motto which has received such national prominence—"Drive carefully, the life you save may be your own" can very well be paraphrased to read, "Telephone carefully the job you save may be your own."

Going Nowhere

"By the streets of 'by and by,' one arrives at the house of 'never.' "—CERVANTES.

NORTH ELECTRIC
VISIONEERING ACHIEVEMENT
SINCE 1884 . . . INTO THE FUTURE
COMPLETE



ABC OF TELEPHONE

Concluded from page 22

ance falls. As a result, maintenance procedures are necessary at regular intervals to keep the fleet at top operating efficiency. To get the best return from each fleet vehicle, make sure the economy maintenance is directed toward the three essential elements—fuel, compression, and spark.

WOMAN'S PLACE

Concluded from page 39

you back," telephone customer service employes are trained to add.

•

"AN OPTIMIST is a woman who starts slipping into her shoes when the preacher says: 'And now by way of conclusion . . . ' "—JOHN L. TEETS, Richwood (W. Va.) *Nicholas Republican.*

Sweetness of Striving

"Uncertainty and expectation are the joys of life. Security is an insipid thing, though the overtaking and possessing of a wish discovers the folly of the chase."—CONGREVE.

Enroll Now in USITA's Management Program

Telephone company personnel wishing to expand their outlook are urged to enroll now for the 1962 USITA Management Development program. Sessions will be held at the University of Kansas from July 22 to Aug. 1. Write, wire, or telephone to:

Dr. James R. Surface, Director
USITA Management Development Program
c/o University of Kansas
School of Business
Lawrence, Kan.

Timber Association Holds Meeting

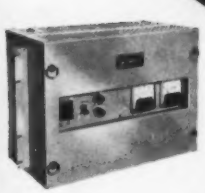
The ATTIA held its second annual meeting at the Statler-Hilton Hotel in Detroit prior to the annual meeting of the American Wood Preservers' Association.

The retiring president, W. F. Rountrey of McCallum Inspection Co., reviewed the program during the past year and announced the names of the elected officers for 1962. Those elected were R. L. McCutchan (McCutchan Inspections, Inc.) President; Roderick Van Trump (Van Trump Testing Laboratory) Vice President; Charles M. Rou (A. W. Williams Inspection Co., Inc.) Secretary-Treasurer; W. W. Dwyer (Pittsburgh Testing Laboratory) and E. C. Doyle (Froehling & Robertson, Inc.) Executive Committee Members. Following the meeting of the Association, the Executive Committee met and appointed Mr. Rou to serve as Executive Secretary.

The purpose of the organization is to standardize inspection procedures and improve the value of inspection to the many clients of the Association members. Much progress along these lines was made during the past year. A standard inspection procedure was prepared by Mr. W. R. Yeager and accepted by the Association. Publication of the procedure should be completed within the next two or three months, at which time it will be ready for distribution to all interested parties. Mr. R. W. Miller of Southwestern Laboratories was commended for the work of his committee in its assistance in the preparation of the procedure.

The next meeting of the Association will be held at Cincinnati, Ohio in April 1963 in conjunction with the AWPA meeting.

LINE OF BATTERY CHARGERS



The line of North Electric PECO battery chargers is the result of a 25 year progressive and outstanding record in the battery charger and custom engineered power supply fields. These 48 VDC constant voltage floating type chargers supply the power demanded by the load AND maintain the battery at a fully charged level. Advanced circuitry provides excellent regulation and assures maximum efficiency. Quality components, conservatively derated, insure long maintenance-free life.

Immediate in-stock delivery in the following ratings: 6 and 12 amp transistorized charger-eliminators, and 12, 25, 50, 100 and 200 amp battery chargers. For new complete data sheets, write *The Dynamic Force In The Telephone Industry.*

SPECIAL FEATURES

— Solid state circuitry — short circuit and overload protection — parallel operation without equalizing connections — silicon rectifiers — convection-cooled — reduced size and weight — relay rack or wall mounting—high efficiency — excellent regulation — low ripple.

NORTH ELECTRIC
TELECOM DIVISION · GALION, OHIO

OTHER DIVISIONS:
DEFENSE SYSTEMS — *Electronics • Command and Control Systems*
ELECTRONETICS — *Switching • Controls • Computers • Components*
POWER EQUIPMENT — *Custom Power Systems • Battery Chargers*

Obituaries

H. A. WAGNER, 69, manager of the Ruthven (Ia.) Telephone Exchange Co., died on May 21 in a Rochester, Minn. hospital.

Mr. Wagner had lived in Ruthven area most of his life, and had been manager of the telephone company for a number of years.

He is survived by his widow, Viola; by a son, Richard, of Minneapolis, Minn.; and by two stepsons, Richard and Ronnie.

•

FRANCIS V. CARR, 62, died on May 31 at Bernard, Ia.

Mr. Carr was a charter member and vice president of the Bernard Telephone Co.

He is survived by his widow; one sister, Mrs. Melvin McDonough of Dubuque; and by four brothers, Michael of Bernard; William of Davenport; John of Dubuque; and Callahan of Aurora, Ill.

•

CLARKE S. REID, son-in-law of Harry P. Mahoney of York, Pa., died on June 4 in a New York hospital following an illness of several months.

For several years, Mr. Reid was assistant to the vice president and general manager of the York Telephone & Telegraph Company. Prior to joining the York company in 1953, he was employed on the Chicago headquarters staff of the former Gary Group of telephone companies.

Mr. Reid was a graduate of Illinois Wesleyan University.

He was a retired Lieutenant Comm. of the Navy, and was buried in Arlington National Cemetery, Arlington, Va. on June 7.

He is survived by his widow Evelyn.

•

SHIRLEY E. MILLER, 72, Aldrich, Mo., died on June 1 after a brief illness.

Mr. Miller had operated telephone exchanges at Willard, Walnut Grove, Bolivar, Pleasant Hope, Morrisville, Aldrich, Everton, and at Dadeville.

He was a charter and life member of the Missouri Independent Telephone Pioneer Association.

Survivors include his son, Shirley E., manager of the Aldrich Telephone Co.; and three other sons, William W. of Los Angeles, Cal.; Rex of Everton; and Dr. Donald R. of Fulton; three brothers, Clarence of Aldrich; John of Walnut Grove; and Randolph of Chicago; four sisters, Mrs. Jerlie Bebom of Wichita, Kan.; Mrs. Ora Weiss of Nixa; Mrs. Lucy Henshaw of Joplin; and Mrs. Laura Hembree of Aldrich; and 10 grandchildren.

PR and Personnel Posts For 2 General of SE Men

Bartley I. Limehouse Jr., who has been with General Telephone Co. of the Southeast, Durham, N. C., for two years, has been named public information administrator for the company's six-state operating territory.

John T. Terry, who joined the company in 1960, has been appointed personnel assistant in recruitment and training for General of the Southeast.

IBT Bell-Independent Group Moves to Springfield

The Bell-Independent relations department of Illinois Bell Telephone Company, formerly located in Chicago, has opened its newly-occupied offices in Springfield's Myers Building.

The department, headed by Walter F. Brissenden, is responsible for the coordination of Illinois Bell's relations with Independent telephone companies throughout Illinois.

The new group of about 20, with two staffs, is headed by Bell-Independent relations supervisors H. A. Douglas and L. E. Wetmore.

NEW!

POW-R-SPADE®

SELF-PROPELLED TRENCHER

MODEL 7200

Rugged, trouble-free POW-R-SPADE digs down to 6 ft.!

Yes, this larger self-propelled POW-R-SPADE is new . . . to you. But to the engineers and development people at Stampings Inc. it is several years old. During that time this new machine has been severely tested and proved. Now we can offer a larger size POW-R-SPADE confident that it will stand up under toughest digging conditions. Every part is designed and constructed with an extra margin of ruggedness and strength to eliminate breakdown possibilities. Model 7200 digs to 6 ft. deep in widths of 4 and 6 inches; 8 and 12 inch widths to proportional lesser depths.

Built-in towing bar for moving to the job behind car or truck. No trailer is necessary. Four digging speeds up to 15 ft. per minute depending on soil

◀ AMERICA'S MOST POPULAR LIGHTWEIGHT TRENCHER

This is the machine that has won the loyalty and respect of users all around the country since its introduction in 1956. Today there are more in use than any other in its class. Recommended for trenching to lay cable, conduit, pipe, tubing where 3" width by 24" depth is sufficient. In the words of satisfied users . . . "a labor saver, easy to operate, and profitable."

Model 1902. Digs 3" wide to 24" deep or 4" wide to 18" deep. Light weight, compact, portable. Digs 1½ to 17 ft. per minute depending on soil conditions. Digs straight, curves, or angles. One man operation from start to finish. Shipped completely assembled.

For Details and Prices

WRITE TO:

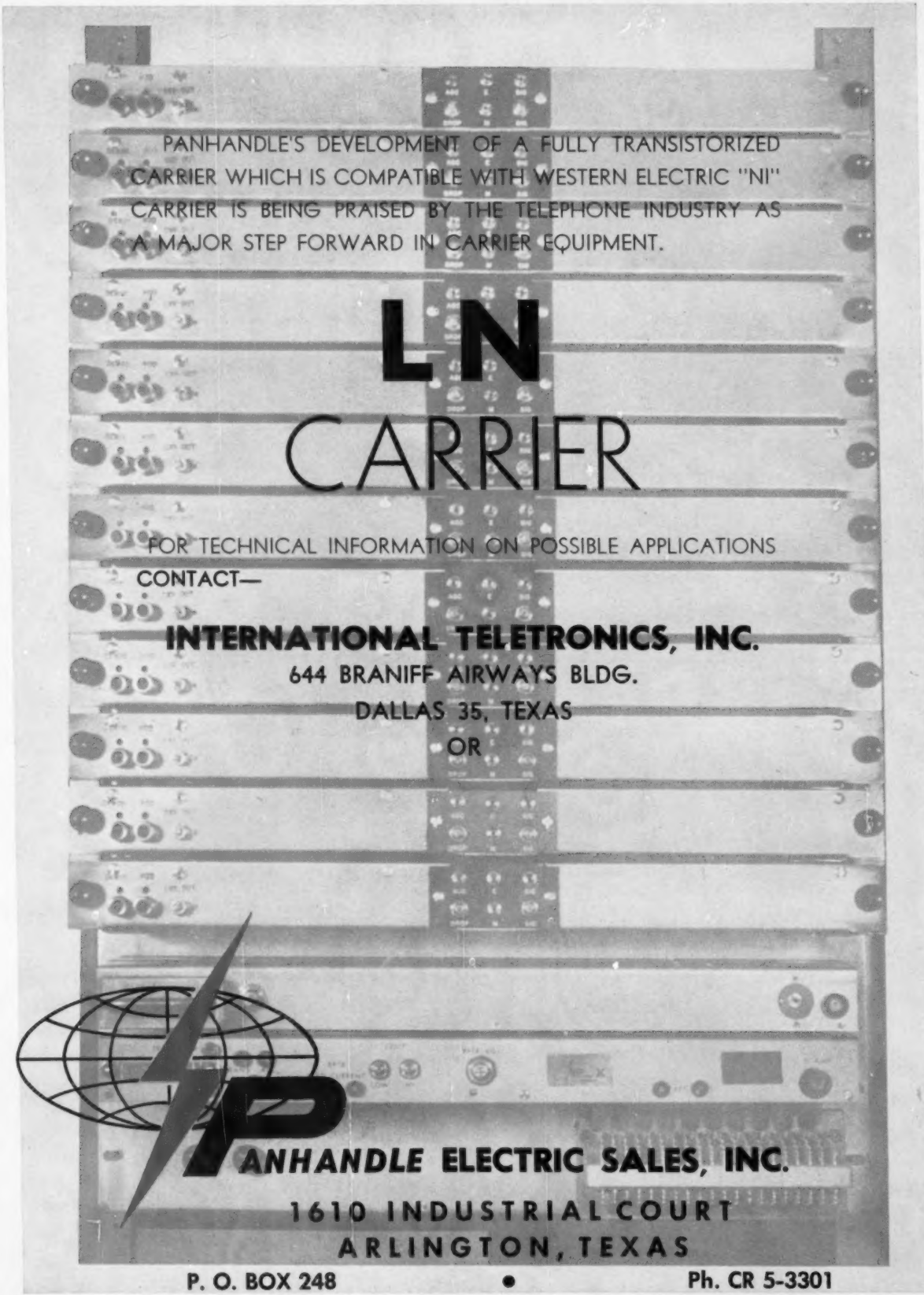
STAMPINGS, INC.

Dept. N Rock Island, Illinois

OR TELEPHONE COLLECT:

Rock Island, Illinois

788-9527



PANHANDLE'S DEVELOPMENT OF A FULLY TRANSISTORIZED CARRIER WHICH IS COMPATIBLE WITH WESTERN ELECTRIC "NI" CARRIER IS BEING PRAISED BY THE TELEPHONE INDUSTRY AS A MAJOR STEP FORWARD IN CARRIER EQUIPMENT.

LN CARRIER

FOR TECHNICAL INFORMATION ON POSSIBLE APPLICATIONS CONTACT—

INTERNATIONAL TELETRONICS, INC.
644 BRANIFF AIRWAYS BLDG.
DALLAS 35, TEXAS
OR

PANHANDLE ELECTRIC SALES, INC.
1610 INDUSTRIAL COURT
ARLINGTON, TEXAS

P. O. BOX 248 • Ph. CR 5-3301

ANNUAL REVIEW

Concluded from page 35

tained batteries. It also contains a 100 kc crystal calibrator for checking frequency calibration.

The Model TF selective filter may

Fig. 18 Model TR voltmeter

also be used with the Model TR voltmeter *(Fig. 18)* to provide a frequency selective voltmeter. It is believed that this unit will fill a need of long standing in the telephone industry as operating companies may procure the TR voltmeter when necessary and later add the Model TF selective filter when and if required.

Wrysinski Named Military Manager of Cal. Interstate

The appointment of Don Wrysinski, public relations director of California Interstate Telephone Co., to the recently established position of military manager, has been announced by Willard Wade, president. The appointment was effective June 1.

"On our system," Mr. Wade stated, "military communications requirements have become more and more complex with each passing year. The appointment of a military manager is designed to assure closer liaison between the needs of the military and the rapid technological developments of the telephone communications industry and, particularly, our company."

Effective concurrently, public relations activities will be combined with the personnel department under the direction of George Atmore, who will assume the title of personnel and public relations manager.

Mr. Wrysinski started with the company in March of 1954, shortly after the company reorganized under California Interstate Telephone Co. In June of that year, he became personnel manager and served in this capacity until his appointment, in March of 1959, as public relations director.

Prior to company affiliation, Mr.

DON WRYSINSKI

Wrysinski served in the U. S. Navy for nine years, during the Second World War and Korean conflict. His interest in the military is still maintained by active participation, as a commander, in the Naval Reserve.

Mr. Atmore joined the company as

GEORGE ATMORE

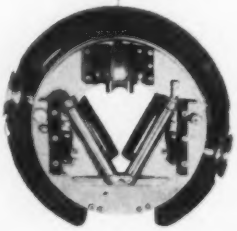
personnel administrator in January, 1958. He was appointed personnel manager in March of 1959, retaining the position to the present time.

As the company's first military manager, Mr. Wrysinski will report to Arthur S. Taylor, operations vice president. Mr. Atmore, in his new capacity of personnel and public relations manager, will continue to report to Mr. Wade.

The cable goes in HERE

The Neale Model K Spinner

The cable comes out HERE



A cross section of the spun cable could look like or or or or or or or any other combination.

Write for literature or contact your jobber

Cable Spinning Equipment Company

3100 Topeka Avenue Topeka, Kansas

Home of Spinning Wire

Once a wallflower...

seldom a bride! That is, if you don't take part. People almost always prosper when they do!

→ That's the basic reason behind USITA.

→ It's the keystone of Independent telephony—the force upon which independent telephone companies depend for many things they could not do individually.

→ Assistance in toll compensation. A legislative spokesman. An interpreter of regulations and trends. The authoritative source of information on technical and financial matters. Many more!

→ Most Independent telephone companies take part in today's USITA and one of America's busiest industries is the result.

→ If your company is not a member, you can enjoy the many benefits for a very nominal sum (and annual membership dues are tax deductible). For details, just telephone the Association's Washington offices COLLECT (National 8-6512) or write: United States Independent Telephone Association, 438 Pennsylvania Bldg., Washington 4, D. C.

USITA keystone of independent telephony

F. W. Addis Retires From General Telephone

Frederic W. Addis retired from the General Telephone Co. of Illinois on June 1 after more than 47 years in the telephone industry.

Mr. Addis, who is well known in the industry, began work for the Maquon Switchboard Co. in Maquon, Ill., in April, 1915. He joined the American

F. W. ADDIS

Telephone & Telegraph Co. in December, 1918, as a lineman, and continued with them until October, 1923, when he joined the Illinois Commercial Telephone Co. in Kirkwood, Ill. That name later changed to General Telephone Co. of Illinois.

In his years in the telephone industry since then, Mr. Addis has held the titles of repairman, manager, commercial representative, commercial agent, commercial supervisor and general commercial supervisor. He has served in Stronghurst, Murphysboro, Springfield and Bloomington.

He and his wife, Rena, were honored by friends and fellow workers at a reitrement party. About 135 persons attended the event. Addis was presented with a motion picture projector and screen by the group.

Wash. Company Has Program On Free Enterprise in U. S.

The West Coast Telephone Co. Everett, Wash., recently introduced to its key management personnel a program on free enterprise. The Company is exploring the problem of whether internal weaknesses pose a serious threat to the foundations of American society, and if so, what can the individual do about it.

West Coast General Manager, L. Gray Beck said the program, called "Partners in Free Enterprise: Your Company, Your Nation and You," was initiated to impress its personnel with the importance of their role in the preservation of the free enterprise system, and the importance of that system to the strength of the nation.

To present the program, West Coast called on Dr. Louis F. Hackemann, San Francisco management consultant. A scholar and recognized authority on the subject of human behavior, Dr. Hackemann cited complacency, moral decay, mediocrity in education, cultural decline and a down-grading of personal responsibility as among the chief threats to free enterprise and the nation.

Likening present-day society in the United States to that of ancient civilizations which also rose to great heights, he warned of the fall that each of the others eventually experienced as a result of its complacency and internal withering.

"The parallels are very keen," he said. "Consider Nero standing on the walls of burning Rome, looking forth and playing his fiddle. Then think of those we see today, 'fiddling away' while things are crumbling around us."

A share of the guilt for this breakdown of the moral fiber of the country he placed in the lap of Industry, in his words, "the life's blood of our society which has catered to indolence . . . and tolerated weakness."

Dr. Hackemann asked, How many people are getting wages they really don't earn? Industry which should boast of strength to 'do,' is afraid to speak out . . . to express itself."

As a result of such hesitation, he said, free enterprise is like a man tied up with many ropes—a potentially dynamic force which finds that it cannot move.

"It's no wonder," he added, "that we have intelligent young people today who question whether free enterprise is the thing or not. We in industry must return to the practice of self-discipline and regain self-respect if we are to untie these ropes which threaten to paralyze our free enterprise system."

American industry and the American people do have the strength and the ability to create reform and change the order of things, the speaker emphasized, "but we aren't going to do it sitting in an armchair watching and critizing as the world goes by."

Western California Receives RIA Award in Research

Western California Telephone Co., Los Gatos, on June 7 received an award by the Research Institute of America, in recognition of contributions made in furthering business research and in stimulating personal and professional growth of their people.

Mrs. Helen Dench, executive secretary of the company, accepted the award from G. W. Day, account executive for the Research Institute.

CEECO

CEECO TYPE C225
GALVANIZED STEEL CASE ASSEMBLIES

CEECO

CEECO TYPE C225 ASSEMBLY

FOR UNDERGROUND (VAULT MOUNTING), CONTAINING 4 TO 460 UNITS.

- LEAD STUB ASSEMBLIES ARE PRESSURIZED.
- PLASTIC STUB ASSEMBLIES ARE SEALED IN THERMOPLASTIC COMPOUND.

These assemblies can be equipped with loading coils, capacitors, inductors and MF units.

Write us for assistance on your loading problems.

CEECO assemblies are sold by your telephone equipment supplier.

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FIGURE 8
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Abrasion resistant Black High Molecular Weight Polyethylene Jacket saves time and money during installation and reduces tree and shrub-trimming maintenance.

Individual pairs have much stronger mechanical protection, and will afford more uniform transmission characteristics over a wide range of climatic changes. For full information, contact.

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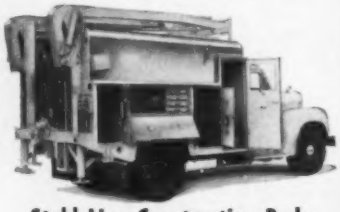
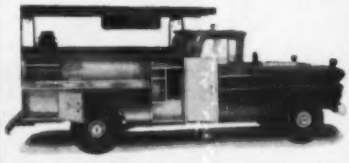
Stahl Side Boxes — convert pick-ups into efficient Service Trucks.

Stahl TML-76 — Lowest-cost Telephone Body in the Industry!



Stahl Line Construction Body, equipped with Derrick and Digger.



Stahl Cable Splicer Body — built for longest, hardest SERVICE!

STAHL

METAL PRODUCTS, INC.

4750 West 160th St., Cleveland 35, Ohio

News on New Products

Editor's Note: **Data on the products described below were received after Mr. Blain's article on new developments, appearing in this issue, was prepared.**

IMPROVED IMPACT DRILLS—Two heavy-duty impact drills have been introduced by Stanley Power Tools. They are designed to combine the best advantages of a heavy-duty electric drill and a power hammer into one compact unit. High frequency impact action together with high speed rotation produces 15,000 to 25,000 impacts per minute (depending on load). These drills are said to cut through reinforced concrete, brick, masonry tile, ceramic tile, concrete pipe and every type of masonry material, as well as embedded metals in varying hardness and density.

Using spiral carbide bits or carbide tipped core bits, these impact drills bore holes from 3/16 to five inches in diameter. Two models have been developed to meet job requirements in these two popular size ranges: No. 402 drills 3/16 to 2-1/2 inch diameter holes. No. 405 bores holes from 3/16 to 5 inches in diameter. The company says spindles are specially designed with triple threading to make bit changing quick and easy. Bit adaptors do not freeze to spindle.

The company says that in relation to the work done, these drills are designed for one-man operation, easy handling, and are no larger than standard 3/4 inch drills. Large diameter holes can be drilled without diamond charged bits, expensive compressors, heavy drilling rigs or extra manpower. Request NP1932.

•

INSTALLATION AND SERVICE BODY—Stahl Metal Products, Cleveland, has announced the TML-76 telephone installation and service body. It is a low-profile body, offering full rear-vision, lower center-of-gravity, and easier handling than previous models. The TML-76 extends the full width of the wheels, eliminating the "fenderettes" used on older models and offering more storage space inside the drawers and compartments.

This body is available in "prime" or

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608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1932_____; NP1933_____; NP1934_____; NP1935_____;
NP1936_____; NP1937_____; NP1938_____; NP1939_____.

Name .....

Company .....

Street .....

Town and State .....

6/23/62

finish-painted to specifications, mounted or unmounted. Request NP1933.

•

PERMACEL PLASTIC TAPE—Permacel is offering a free, reusable plastic parts box with each purchase of four rolls of Permacel 29 plastic electrical tape.

The sturdy, clear plastic box is 7" x 3-½"x2" and can be compartmented into five sections with plastic separations which are provided. The box has a self-contained lid with reinforced hinges and closure. It can be used to hold small parts, hardware, household and office items, and sporting paraphernalia such as fishing flies and hooks, golf tees, etc.

Designated Permacel 29L, each unit contains four rolls of tape approved by Underwriters' Laboratories for insulating electrical wire splices. Seven mils thick, it has easy stretch and excellent conformability to give a snug wrap with a minimum of tape build-up. The carefully balanced adhesive has good quick stick and excellent aging properties. The company says it possesses high dielectric strength and insulation resistance.

According to the company it also can be used for harness wrapping of cables and wires, and for protecting tool handles and sharp edges. Request NP1934.

•

RADIO-TELEPHONE TERMINAL—An automatic radio-telephone terminal for use at mobile telephone service base stations has been developed by the communications and weapons division of Philco Corp.

The Philco model RTT-1000 radio telephone terminal provides termina-

tion of a four-wire radio circuit into a two-wire telephone line or carrier channel.

The transmitter-receiver is automatically controlled by the voice of the operator or land telephone subscriber, or the voice of the mobile subscriber. Input and output levels are automatically regulated, the company says.

The RTT-1000 requires only seven inches of relay rack space. Power may be supplied to it from a 48-volt central office battery or an external power

A LITTLE SOMETHING FOR ALMOST EVERYBODY

or How to succeed in communications while keeping ahead of the Joneses

SOMETHING unusual about Lynch is that it can deliver communications equipment to solve problems for just about everybody . . . from the big operator to the little fellow who's trying to run a modest-sized business in a toe-to-toe market.

WELL, here's the hottest new item that Lynch has turned out for quite a spell . . . a *microwave multiplexing system* that's just about right for everyone—Telephone Company, Utility, Railroad, Pipeline, Military, etc.

WE'LL call it the B910 (because that's what a Lynch secretary assigned as a model number), and we suggest you might give some consideration to this feature:

THE B910 is inexpensive to buy, inexpensive to expand and inexpensive to maintain. It uses a minimum of common equipment . . . and this in itself is quite uncommon. You can start with as few as one channel (that's as few as they come) and build up to 600, with no penalty whatsoever.

WE don't mind telling you: 120 channels of B910 (that's ten 12-channel groups) can be applied directly to the microwave radio equipment without any complicated gadgets . . . and with no supergroup equipment either. The Lynch filters turn the trick . . . and each channel has built-in oscillators for modulation and signaling. Think what that means when there is an indication of oscillator failure (a remote possibility, but our individual oscillators are subject to the same conditions as expensive master oscillators). You're still on the air with all the other channels!

WE don't mind telling you: Transistorized construction gives you all these familiar benefits (not so familiar if you're still using vacuum tube equipment): small size, light weight and less heat, longer component life. Think of all the beer you can buy with the money you save on the low power consumption and lower maintenance cost. You know *that* story . . . and the Lynch B910 makes it non-fiction.

AND, we don't mind telling you: Lynch's well known knack with filter systems, designed into the B910, relieves you of the cost of intermediate supergroup modems and other common equipment, avoids expensive hybrids, provides options for easy drop and reinsert configurations and, of course, sounds best (you can actually recognize the fellow on the other end). The Lynch B910 can't overload the microwave system, because it utilizes single-sideband, suppressed carrier transmission. Among the L-E-T-T-E-R-S the B910 works with are CCITT, the indomitable W. E. "L" (we have two orders from them, incidentally) and some others, if you'd care to guess (we have lots of options).

AND if that's not enough, the B910 has been producing toll revenue for over a year . . . longer than any other similar transistorized system in the country. You may have heard that it is operating over a 1400 mile pipeline system; and that it is providing communications between some islands in the South Pacific via a scatter radio system.

IF you're in the communications business and not currently using two tin cans and a string, we suggest that the Lynch B910 can do the best possible job of solving your particular problem at the lowest cost. It won't hurt you a bit to start on a budget and grow as the Joneses move into the neighborhood and order new service. If Mr. Jones happens to work for W. E. or one of those other big outfits, you might give him our number. What Lynch can do for you, it can do for the Joneses, too.

Lynch LYNCH COMMUNICATION SYSTEMS INC.

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Contact your Graybar Representative or call us direct for complete information.

supply. All solid state circuitry, and the use of standard components and plug-in modular construction assure high reliability and easy maintenance, the company says. Request NP1935.

•

ALUMINUM GUY GUARD—An extruded aluminum guy guard is now being manufactured by the A. B. Chance Co. that weighs only 4 pounds, ½ the weight of comparable steel guy guards. A bulb edge on the extruded section gives the guard extra rigidity

and also prevents cuts should a pedestrian accidentally hit the guard.

Because the guard is made of aluminum, it is virtually corrosion-free retaining its high visibility, good appearance and strength for years.

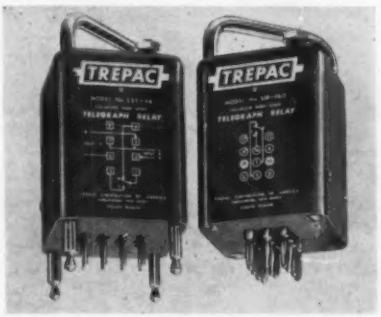
The guard is applied by hooking the strand through the top hook and sliding into place. The strand or anchor rod is trapped between the guard and a washer when the bottom bolt is tightened. The extruded aluminum guy guard is a half-round type and made in both 7 and 8 foot lengths. Request NP1936.

•

POLARIZED TELEGRAPH RELAY—Trepac Corp. of America is introding a polarized high speed telegraph relay which will provide stable adjustment and maintenance-free relay switching operation as well as upgrading the speed handling capabilities and reliability of such equipment as: teletype and teleprinter machines, central office dc repeaters, voice frequency telegraph terminals, teletype, telegraph and data circuits, teletype switching systems and telecryptographic equipment.

The two models now available are the 539-PA which replaces the W.E. type 255-A and model 539-PB/2 which replaces the A.E. type PTW-L202-A. Both of these models are directly interchangeable with their electromechanical counterparts with the same type terminal pins and designations to the input circuits, and the output switching functions.

No modification is required in any unit or its associated relay socket for any type of operation. The Trepac models 539-PA and 539-PB/2 use silicon semiconductor elements and



operate over a temperature range from 38°c to +150°c. The units are extremely rugged and scaled in a rustproof cadmium plated steel case with an enamel finish. There are no contacts to maintain, clean, adust, arc or pit; and in service they have proved capable of providing literally billions of cycles of complete trouble-free operation.

The Trepac model 539-PA polarized high speed telegraph relay acts as an electronic repeater capable of correcting large amounts of characteristic distortion. These units operate from either polar signals (as low as 1.5 mils) up to 200 mils. The purely resistive input with no inductance in the signal line and complete isolation between the input and the output circuits, permit any number to be used in series without causing any interaction between other units or associated equipment on the same signaling circuit. Request NP1937.

•

PUSH-BUTTON RADIO—A new pushbutton two-way radio accessory is being placed on the market by General Electric Co. for use with its transistorized two-way radio line.

The new design, called the Encoder 100, reduces the time it takes for a dispatcher to call a radio-equipped car or a person wearing a paging receiver. Only one second is required to make the contact, it is said.

With the new tone console on his desk, a dispatcher can communicate with up to 99 vehicles individually without sacrificing the ability to talk to all cars at once if desired. One button is reserved for the "all-call" feature.

The new unit may be used by telephone companies to contact individual line crews or key management cars.

Quicker signaling to receivers being called selectively is accomplished by fast-acting mechanical vibrating reeds

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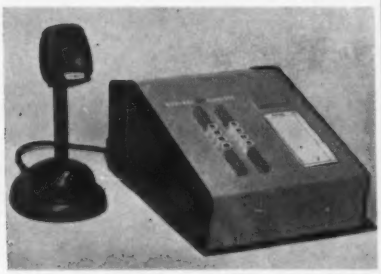
which serve as tone-generating devices in the accessory unit.

In addition to individual call and all-call, the new equipment can be obtained with group call which permits all radio receivers in a specific work function to be contacted simultaneously without disturbing other units in the system.

Where message traffic is heavy, En-



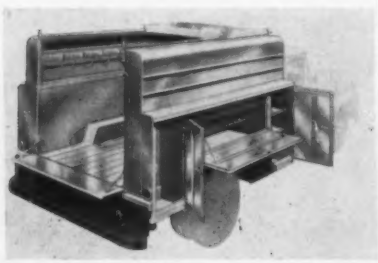
coder 100 saves the person on the receiving end of the call from listening to constant messages not intended for him. It enables the dispatcher in a high-traffic system to handle more individually-placed calls faster.

Circuits of both Encoder 100 and Encoder 300 are completely transistorized. The decoder in the mobile units also is transistorized, resulting in low battery drain. Request NP1938.

•

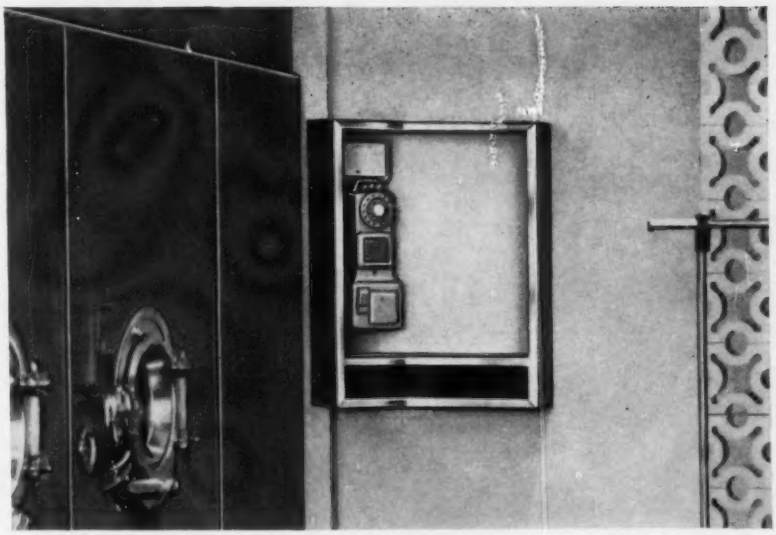
ENCLOSED SUPERSTRUCTURE BODY—An enclosed superstructure body has been designed by Utility Body Co. Named the Series E, this body has a weatherproof telescopic steel roof which allows maximum loading flexibility as well as all-weather protection.

The Series was designed after sug-



gestions in a survey of experienced operators in the public utilities field to provide big work room and maximum carrying space. All necessary tools and parts can be conveniently located in special side compartments. Three basic models are made in 75", 90", 104" and 126" body lengths to fit any ½, ¾, or 1½ ton chassis. The company says the Series E is of extreme durability that will outlast two or three truck chassis and can be transferred to new trucks as they are needed. Request NP1939.

NEW ON THE SCENE . . .



neat, attractive, compact!

ACOUSTI-CALL model 20 telephone booth

One of the fastest moving "boom" type merchandising ventures ever to enter the marketing scene is the self-service dry cleaning business. Over 2400 of these centers have been set up in a short period and new installations are being added daily. Here, convenient ACOUSTI-CALL telephone booths will invite women to make numerous phone calls to fill idle waiting time.

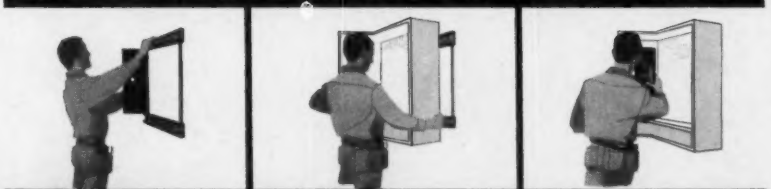
Ideally suited for every commercial establishment, the highly styled ACOUSTI-CALL Model 20 telephone booth was the immediate choice here. Functional and modern in design, it compliments every contemporary architectural decor.

Measuring a compact 27" wide and 17⅛" deep overall, this eye-appealing space-saver can be mounted in practically any high traffic area. Quality construction assures extra durability and wear—built to last the life of the instrument.

Independents, don't miss this opportunity—it enables you to supply an attractive booth with a better than ever, high revenue potential to commercial establishments everywhere.

The ACOUSTI-CALL Model 20
Available from your telephone equipment distributor.

ONE MAN INSTALLATION IN 30 to 45 MINUTES



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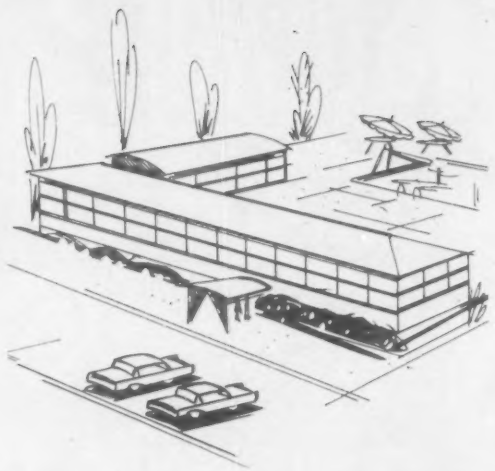
AE

offers you a Leich motel-hotel PABX to fit each customer's needs

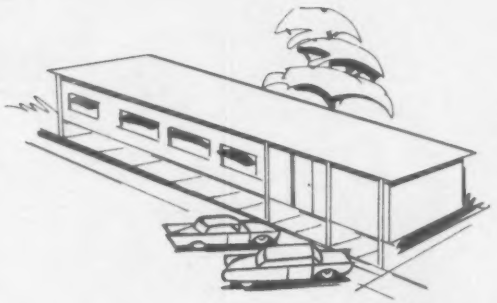
10-trunk attendant's turret and 40-station message-waiting turret.

AE offers a PABX to fit any motel or hotel customer. Your subscriber can choose either a standard or deluxe type of service—depending on his size and needs. Either type of service is available with systems providing 40, 80, 100, or several hundred lines.



DELUXE SERVICE. PABX service primarily for large motels and hotels where an attendant is usually on duty. Offers a wide variety of services.

- Two or three-digit dialing between rooms
- Message-waiting service
- Station metering of local city calls
- Single-digit dialing and rotary line service to hotel facilities, such as room service
- Restricted station-to-station night calling
- Toll diversion



STANDARD SERVICE. PABX service for smaller motels and hotels where an attendant may not always be on duty.

Permits motel personnel to answer incoming city trunk calls from *any phone*—and transfer the call to a guest by simply dialing the proper digits. Especially valuable at night when it is desirable to handle calls from living quarters. Offers these services:

- Two or three-digit dialing between rooms
- Universal night answer and transfer *from any telephone*
- Message-waiting service
- Rotary-line service to hotel facilities
- Toll diversion

For complete details and revenue-building sales aids, write to Director, Business Communications Sales, Automatic Electric Sales Corporation, Northlake, Illinois.

Type 80 telephone with message-waiting lamp. Compact Starlite® telephone may also be used as message-waiting phone.

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Subsidiary of

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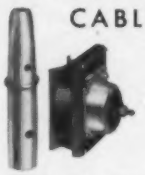
GENERAL SYSTEM

Stewart

HUNT OVERHEAD CABLE TROUBLE FROM THE GROUND



MODEL FP

Fish Tail Exploring Coil

BY POPULAR DEMAND—The reliable and well known MODEL F Fish Tail Exploring Coil now available as the MODEL FP with flexible pole attachment to fit any wood or fibre glass pole and with 25 foot leads.

MODEL FP can be supplied at $22.00 extra with Model A or Model L in place of the Model F Fish Tail Coil now included with these Models. It is electrically identical to the Model F.

The MODEL FP can be furnished separately at $43.00.

A Model FP conversion attachment can also be furnished for later Model Fish Tail Coils to be installed by the user at $22.00.

MODEL A Cable Tester & Locator

The complete unit for locating grounds shorts, wet spots and other faults in cables

In addition will locate and determine the depth of buried pipe or conductor.

MODEL L Cable Tester

Simple to use, and saves time. More accurately locates cable faults, wet spots and grounds.

MODEL TE Transistor Exploring Coil AMPLIFIER

The Smallest, Lightest Exploring Amplifier Made. Has More Voltage Gain Than Any Other!!!

SMALL—One-forth the size and weight of our old Model E. Uses only 4 penlight cells.

HIGH GAIN—Gain with proper impedance match, 200 to 400. 2 to 3 times gain of Model E. Signal output adjustable. Battery turned off when receiver plug is removed.

INSTRUMENT LABORATORIES CORP.
STEWART BROTHERS DIVISION
315 W. WALTON ST. CHICAGO 10, ILL.

Father's Day had a special significance this year for Raymond H. Burfeind (above), veteran Independent telephone man who retired recently, as it also was his 80th birthday. Members of Burf's family gathered at the home of his son, Nat T. Burfeind, in Arlington Heights, Ill., to help him celebrate both occasions.

Leslie H. Warner Receives Alumni Achievement Award

Leslie H. Warner, president of General Telephone & Electronics Corp. recently was the recipient of the 1962 Alumni Achievement Award from the University of Wichita.

Mr. Warner, who finished first in his class of 1935, was the seventh recipient of the alumni award, the highest honor the alumni can bestow on a fellow member.

L. H. WARNER

He was graduated from the university with a bachelor of arts degree in business administration. At commencement exercises, he was given the William H. Swett Price award for Efficiency with a record of highest scholastic average in his senior year.

In 1937, he received a master's degree from the Harvard Graduate School of Business Administration, which he attended on a scholarship.

After graduation, Mr. Warner joined Automatic Electronic Co. in Chicago, communication equipment manufacturing subsidiary of Theodore Gary and Co., which merged with General Telephone & Electronics Corp. in 1955.

From 1938 to 1942, he was managing director of Automatic Electric do Brasil, S. A.

Late in 1942, he returned to the United States to become vice president of Automatic Electric Sales Corp. and Automatic Electric International, Inc., the domestic and international sales subsidiaries of Automatic Electric Co. He was elected president of both these companies in 1947 and in 1955, became president of Automatic Electric Co.

In July, 1957, he was elected executive vice president of manufacturing of General Telephone & Electronics Corp. He became a director of the corporation in March, 1960, and 13 months later, was elected president.

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Beaverton, Oregon

116 South Rusk Street
Kilgore, Texas

130 East Lime Avenue
Monrovia, California

Tanzer Named Area Manager For ITT Kellogg

W. J. "Bill" Tanzer has been named west coast area manager for the transmission products department of ITT Kellogg, Los Angeles.

In his new position, Tanzer will handle military, industrial and export sales of carrier, microwave, voice frequency terminating equipment and related accessories.

He previously served as project engineering manager on communications systems for Vandenberg AFB space programs at ITT Kellogg's Los Angeles engineering facility. He has been employed by this division of International Telephone and Telegraph Corp. for 20 years.

New Manager Named By Lenkurt Electric

Glenn H. Vought, communications sales engineer with Lenkurt Electric Co., in the company's Washington, D. C. office, has been named manager of Lenkurt's office in Rome, N.Y.

G. H. VOUGHT

Vought joined Lenkurt in 1955, where he performed research and design on military telecommunications projects until last year, when he was assigned to Washington, D.C.

Lenkurt Electric, a subsidiary of General Telephone & Electronics, is a manufacturer of video, voice and data transmission systems.

Automatic Electric Makes Two New Appointments

Frank W. Krescanko, formerly district manager of Far East operations for Automatic Electric International, Northlake, Illinois, has been assigned as staff assistant to Milton Price, vice

BURY CABLE QUICK

WITH A

PARSONS 150 Trenchliner®

Cost per lineal foot of ditch varies with ground you are working in. But one way to keep that cost on cable work as low as possible is with a Parsons 150 Trenchliner. With the 150 you are always miles and dollars ahead on every digging assignment. Here are the reasons why:

Perfect weight balance — for maximum tractive and digging effort.

Hydraulically controlled digging wheel — instant response for maintaining close grade tolerances.

Guaranteed headshaft — for maximum digging power and long-life service. Guaranteed for the life of the machine.

Tractor-type Crawlers — independent steering and drive give you better control. Easy maintenance.

Digs in fast — delivers ditch 16" to 26" wide, down to 5¾' depths at speeds up to 25 feet per minute.

P-204

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A Division of Koehring Company
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fiberglass ladders are strong

and safe

Non-conducting, non-absorbent, yet strong and light as an aluminum ladder! Power company tests indicate Alco-Lite Fiberglass Ladders extremely safe around high voltages. Resist chemicals, acids, gases, fumes, and moisture.

Alco-Lite Fiberglass Ladders meet ASA Code A14.2 for portable *metal* ladders. The wider side rails are SOLID fiberglass—not plastic covered soft wood. The wide steps and rungs are high tensile strength aluminum. More riveting and bracing throughout!

Ladders safe, strong, more rigid, have longer life, because of exclusive design and construction. Maintenance negligible. *SEND FOR CATALOG!*

Original Manufacturer of ALUMINUM Ladders

Aluminum Ladder Co.

West Darlington Street Ext.

FLORENCE 8 S. CAROLINA

president and manager of Panama and Central America for General Telephone & Electronics International, Inc., with headquarters in Panama.

Starting with AE International in 1957 as an administrative assistant, Krescanko was promoted to sales liaison manager in 1958. He became a district manager in 1960.

F. W. KRESCANKO

A native of Racine, Wis., Krescanko studied at the University of Wisconsin, where he received a bachelor's degree in economics. He later went on to earn a bachelor of foreign trade degree from the American Institute of Foreign Trade, Phoenix, Ariz.

REIN MAREMAA

Krescanko is succeeded by Rein Maremaa, previously a sales representative for AE International in New York City. Maremaa, who was born in Estonia, holds a B.A. degree in economics from Western Reserve University, Cleveland, and a bachelor of foreign trade degree from the American Institute of Foreign Trade. Maremaa started with AEI in 1959.

Craig of General Cable Retires After Long Career

Clayton J. Craig, vice president of General Cable Corp., associated with the Independent telephone industry for many years, has retired. Mr. Craig founded his own company, General Insulated Wire Works, and acted as president and general manager. With the acquisition of this division by General Cable, he continued as president and general manager.

C. J. CRAIG

Medico Industries Appointed Parsons Distributor

Medico Industries, Inc., Pittston, Pa., has been appointed Parsons Co. distributor of the Model 77 Trenchliner.

Medico Industries, Parsons states, will sell and service the compact 77, which is especially suited for utility work. The 77 digs a trench 5 feet deep, 8 through 15 inches wide, and 4 feet deep, 16 inches through 18 inches wide.

The manufacturer points out that compact design—5-ft. 8 in. high and 48-in. wide—permits the machine to work in tight quarters, near fences, poles, other obstructions.

Medico Industries is located at 11-13 Tompkins St., Pittston.

Expands Chicago Plant

Mathias Klein & Sons, Inc., Chicago manufacturer of linemen's and electricians' equipment, is expanding its plant. An addition to the present building of 21,000 sq. ft. is now under construction. The expansion will provide additional room for machine shop and forging facilities.

Automatic Electric's communications products division sales force gathered recently at their Northlake, Ill. headquarters for comprehensive sales training sessions. The training is designed to keep the sales organization up-to-date on current developments in communications equipment so that they may better assist their customers. Attending were (l. to r., front row) in the first picture: P. F. Smith, C. M. Ulman, E. N. Brooks, R. J. Rantman, R. C. Lyday, and R. D. Friehe; (middle row): L. J. Jordak, R. M. Sanders, E. W. Littell, P. J. Sherkey, J. Griesmaier, D. A. Davis, and M. A. Brash; (standing): J. A. Rector, O. L. Bane, T. A. Markert, instructor Wayne Leonard, D. L. Workinger, J. H. Davis, A. A. Schneider, and A. O. Krueger. Also in attendance were (l. to r., front row in the second picture: L. C. Wiley, E. S. Box, D. R. Phelps, J. D. Mooney, W. P. Horn, instructor Wayne Leonard, J. J. Bolger, G. T. Kane, Arnold Pearson, and J. C. Pardue; (standing): D. L. Forsberg, John Gunther, E. G. Shelor, C. A. Roos, K. W. Clacher, C. F. Norsch, Mark Prentice, D. K. Allen, George Summerscales Jr., J. D. Braddock, W. R. Asa, and J. R. Skidmore.

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Three Organization Changes At General Telephone

General Telephone Directory Co. is reorganizing its area of operations into three regions, eastern, central and western, Roland T. Beard, vice president, sales announced. The new central region will be comprised of five divisions previously included in the eastern region. These offices are located in Bloomington, Ill.; Columbia, Mo.; Fort Wayne, Ind.; Madison, Wis.; and Muskegon, Mich. The western region which includes six division offices will remain the same.

O. D. STAYNER

Owen D. Stayner has been appointed manager of the central region, with headquarters in Des Plaines, Ill. A native of Idaho, Stayner attended Utah State University, and joined the Directory Company as a sales representative in 1947. He has held the position of division manager in Erie, Pa. since 1954.

MAX F. GUDOWSKI

Max F. Gudowski succeeds Stayner in Erie as division manager. Gudowski came to the Directory Company as a sales representative in 1951. He has been division manager in Columbia, Mo. for three years.

J. MIRABELLA

Joseph Mirabella assumes the post vacated by Gudowski in Columbia. His Directory Company career includes experience as sales representative and sales supervisor in Mich. and Minn.

Whitney Blake Company Appoints Texas Salesman

The appointment of Bill Williams as Whitney Blake Co. sales representative has been announced by Charles Cumpstone, general sales manager. Mr. Williams will be working from Whitney Blake's Dallas, Tex., district office.

BILL WILLIAMS

A native of Texas, Mr. Williams attended Dallas schools and served in the Pacific during World War II. Prior to joining Whitney Blake he was a salesman for Standard Electric Manufacturing Co., Hubbard & Co., and most recently for I.T.E. Circuit Breaker Co.

Whitney Blake Co. manufactures a line of wire, flexible cords and power systems for use in the electrical com-

munications, appliance and shipbuilding industries.

Edward Crook Made Klein District Manager

Mathias Klein & Sons, Inc., Chicago manufacturer of pliers and equipment for linemen, has appointed Edward Crook as district manager. He will make his headquarters in Boston and will cover the New England states, Quebec, and the Maritime Provinces of Canada.

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1,100	Jack, Spring, Stromberg-Carlson, #127 on #90 Mtg. 20 per	(New)
65	Jack, Spring, Stromberg-Carlson #128 on #97 Mtg. 10 per	(New)
200	Jack, Spring, Stromberg-Carlson, #130 on #99 Mtg. 10 per	(Recond.)
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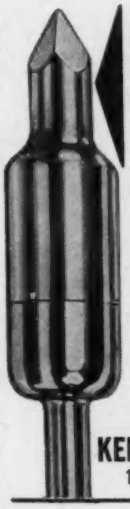
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Index to ADVERTISERS

	Page
Acme Visible Records, Inc.	—
Acoustics Development Co.	59
Alphaduct Wire & Cable Co., The	—
Altec Lansing Corp.	—
Aluminum Company of America	—
Aluminum Ladder Co.	64
American Appraisal Co.	67
American Creosoting Corp.	—
American Steel & Wire Co.	—
American Telephone & Telegraph Co.	—
Anaconda Wire & Cable Co.	—
Arps Corporation	—
Arrow Fastener Company	—
Atlantic Research Corp.	—
Automatic Electric Sales Corp.	4-5, 36-37, 60-61
Barber Adv. Specialties, Walt	66
Barnard & Associates, Inc., J. C.	67
Bell Telephone Laboratories	—
Benner-Nawman, Inc.	—
Berry & Co., L. M.	—
Bethlehem Steel Co.	—
Bishop Mfg. Co.	—
Bohnsack Equipment Co.	—
Brady Co., W. H.	—
Brand—Rex Div.	55
Buckeye Telephone & Supply Co.	68
Budelman Electronics Corp.	—
Burgess Manning Co.	—
B. Y. Dial Service	67
C&D Batteries, Inc.	—
Cabaniss-Pogue Co.	67
Cable Construction Co.	67
Cable Spinning Equipment Co.	52
Calculagraph Company	—
C&S Products Inc.	—
Chance Co., A. B.	—
Chevrolet Div. of General Motors	—
Chicopee Mills Inc.	—
Cleveland Inst. of Electronics	—
Coates Field Service, Inc.	58
Coleman Cable & Wire Co.	—
Collins Radio Co.	—
Colorado Fuel & Iron Co., The	—
Commercial Cord Company, Inc.	43
Communication Equipment & Engineering Co.	54
Cook Electric Company	8-9
Copperweld Steel Co.	—
Crane Inc. Carl C.	67
Cushman Motors	—
Davis Construction Co.	—
Davis Mfg. Co., Inc.	—
Deere & Co.	—
Delco Radio, Div. of General Motors	23
Dial Haven, Inc.	—
Dierks Forests, Inc.	69
Dillon & Co., Inc., W. C.	—
Donnelley & Sons Co., R. R.	—
Duo-Safety Ladder Corp.	—
E. & C. Contracting Corp.	67
Electronic Controls Inc.	—
Everstick Anchor Co.	—
Exide Industrial Div.	—
Floor-Con	—
Ford Motor Co., The	10-11
G-V Controls, Inc.	47
Gagne Enterprises, Inc.	—
General Cable Corporation	—
General Communications Products Inc.	—
General Electric Company	—
General Machine Products Co., Inc.	71
General Telephone Directory Co.	16
General Welding, Inc.	—
Gladwin Plastics, Inc.	65
Gould-National Batteries, Inc.	—
Graybar Electric Co.	32-33
Greenlee Tool Co.	—
Hallamore Electronics Co.	—
Hammond Drierite Co., W. A.	—
Harris-Mc-Burney Company	67
Henkels & McCoy	67
Hirsch Organization, Inc., Gustav	—
Hitachi, Ltd.	—
Holan Corp.	—
International Teletronics Inc.	—
Irwin-Auger Bit Co.	—
ITT-Kellogg	12-13
Johns-Manville Corp.	—
Justrite Mfg. Co.	—
Kearney Co., Jas. R.	—
Kelley Products	—
Kemode Manufacturing Co., Inc.	69
Keystone Steel & Wire Co.	—
Killoren Company	66
Klein & Sons, Mathias	—
Knapp Mfg. Co.	—
Koppers Co., Inc. Wood Preserving Div.	69
Kwal Paints, Inc.	—
Lenkurt Electric Co.	—
Lindsay Telephone Supply Co.	—
Lorain Products Corp., The	—
Lynch Communication Systems, Inc.	57
Magnolia Chemical Co., Inc.	45
Mast Directory Co., Leland	67
McCabe-Powers Body Company	—
McGrath Engineering Inc.	—
Minnesota Mining & Mfg. Co.	—
Monarch Molding, Inc.	—
Monsanto Chemical Co.	—
Morrison-Pelsue Co.	—
Natco Corporation	—
National-Standard Co.	—
National Telephone Supply Co.	Back Cover
Neubauer Manufacturing Co.	—
Neuses, Inc., P. K.	45
North American Philips Co.	68
North Electric Company	48-49
Northeast Electronics Corp.	—
Okonite Company, The	—
Olin Mathieson Chemical Co.	—
Onan Division, Studebaker-Packard Corp.	—
Orangeburg Mfg. Co.	—
Orbit Industries, Inc.	—
Page & Hill, Inc.	69
Panhandle Electric Sales, Inc.	51
Parsons Company	63
Petersen Engineering, Inc.	—
Phelps Dodge Copper Products Corp.	—
Precision Multiple Controls, Inc.	—
Preformed Line Products Co.	—
Pruzan Company, Jack	67
Puregas Equipment Corp.	—
Radio Corporation of America	—
Radio Frequency Laboratories	—
Railway Communications, Inc.	—
Radiation Inc.	—
Rawlplug Co. Inc., The	—
Recordak Corp.	—
Reliable Electric Company	27
Republic Creosoting Company	—
Rezolin Inc.	—
Rockwell Products Corp.	—
Rohn Manufacturing Co.	—
Rolatape, Inc.	—
S & G Manufacturing Corp.	—
Schauer Mfg. Co.	—
Seymour Smith & Son	—
Sherron Metallic Corp.	—
Sierra Electronics Corp.	—
Sloan, Cook & Lowe	67
Stahl Metal Products	56
Stampings, Inc.	50
Stewart Brothers	62
Stromberg-Carlson® Products, General Dynamics/ Telecommunications	2-3
Studebaker	—
Supperior Cable Corporation	—
Suttle Equipment Corporation	—
Tahlen Hammer Co.	69
T.E.I. Corp.	—
Telectric Co.	69
Tele-Muff Co.	—
Telephone Cables, Ltd.	—
Telephone Carrier Service	67
Tel-Plastics, A Div. of Woodman Co., Inc.	—
Tele-Service Co.	67
Teletype Corporation	—
Tele-Wire Supply Co., Inc.	—
Telkor, Inc.	—
Terado Company	45
Thornhill Publishing Co.	62
Transandean Associates, Inc.	29
Trepac Corp. of America	—
Tudor & Yager, Inc.	67
Union Carbide Plastics Company	25
U. S. Cable Constructors, Inc.	—
United States Independent Telephone Association	53
United States Instrument Corp.	—
United States Motors Corp.	—
United States Steel Corp. American Steel & Wire Co.	—
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Utilities Contracting Corp.	—
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Utility Products Co.	—
Utility Service Co., Inc.	—
Utility Tool & Body Co.	—
Vermeer Manufacturing Co.	—
Warren Mfg. Co., The	—
Webster Electric Co.	—
Weikel Line Company	67
Welding Service	—
Western Electric Company	14-15
Whitney Blake Co.	—
Williams Inspection Co., Inc., A. W.	67
Willys Motors, Inc.	7
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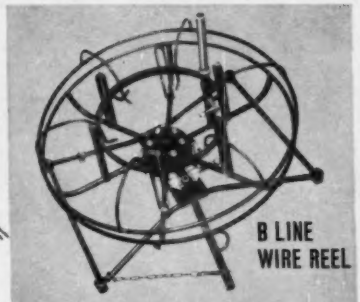
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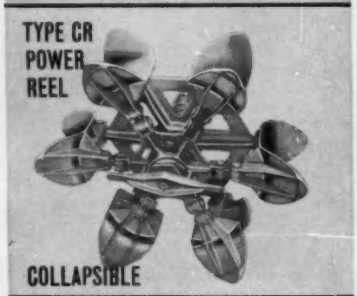
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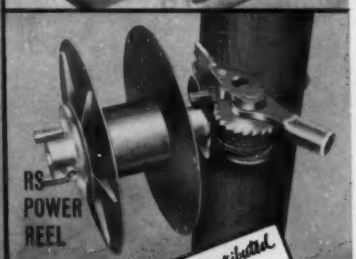
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